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"Salvation of India lies in Cottages."

—*MAHATMA GANDHI*

UNSYMPATHETIC AND INEFFICIENT ADMINISTRATION

IN the schemes of national development the one that should hold priority over every other programme is the problem of sympathetic and efficient administration. That is the basis of all development including that of national character and in the absence of which no development worth the name could be thought of.

It is unfortunate that our ruling authorities in their hurry to produce spectacular results seem to have overlooked the basic need of efficient, responsive and responsible administration. And during the last 10 years the tone and efficiency of the administration has deteriorated to such an extent that the people in general seem to have lost faith in the capacity and bonafides of the machinery to render them timely and useful service.

Mounting dissatisfaction against the inefficiency of administration is accompanied with ever increasing and heavy burden of taxation which is being mostly resented by the people. The two opposing factors working side by side have created an unwanted climate in the country wherein tax-evasion is largely resorted to by the people. Why should the people pay such heavy taxes to maintain an administration which fails to serve legitimate needs and interests of the people is a common plea to justify tax-evasion.

The anomaly of the situation of growing discontent and bitterness on one side and heavy taxation on the other must be removed by the authorities if people are not to be forced to refuse payment of taxes in an organised manner. That would be a disaster and must be averted before it is too late.

Of coures, the Government has the right to tax the people. But that necessarily carries corresponding responsibility on the part of the Government to so conduct its affairs that the people may feel reasonably satisfied. The consciousness of faithfully discharging this responsibility towards the people has not been much in evidence all these 10 years of independence. On the contrary there is mounting volume of discontent all over the country that the administrative machinery has not only become unbridled and corrupt but it has also become largely callous to the needs and grievances of the people. That is a disquieting situation which at the moment is engaging serious attention of the Central and State Governments.

Deputy Collector's Visit

Personally we too had our share of sad and shocking experiences of irresponsible

and degenerated behaviour of our administrative machinery at our head quarter at Pohri and while touring Sourashtra and Karera and Pichhore Tehsils of Madhya Pradesh during last summer. The first of these was the occasion of the visit of the Deputy Collector of Shivpuri-district to Adarsh Vidyalaya Pohri in connection with the submission of the report of the institution to the Governor of Madhya Pradesh for the grant of contribution from the Governor's special fund for which application of the institution was officially invited by the collector of Shivpuri. To be sure of the intentions of the administration, the experiences of which have not been happy in the past, the application for the grant of contribution was submitted to the Governor on getting a second reminder from the collectorate.

This grant from the Governor's fund was intended for such institutions as were not getting Government aid and Adarsh Vidyalaya was one such. It is probable that the Governor might have called for information of the activities of of such institutions as have submitted their applications for grant from respective district collectors before the money was to be disbursed among them. On personal enquiry from the Governor himself by our Secretary we were already in the know that this was not a big amount for which 2000 applications were already received by the Governor. Naturally we were not much interested in the grant itself and it is still more interesting that the Governor personally knew us and our institutions.

As red-tap would have it the Deputy Collector of Shivpuri came to visit our institution without any official information from the Collectorate. From his first contact with us personally he gave us an impression as if he had come for some Judicial Enquiry against the institution. Obviously, his attitude was unfriendly and bureaucratic in the extreme from the very start. He suspected every statement of ours and wanted all vouchers to be submitted him to check up various items of expenditure as if we had swallowed any government money which, of course, we have never been getting and had all the time avoided to take it. He crossed his limits by putting irrelevant and provocative questions regarding the freedom of the institution as to why particular teachers were dismissed and by what authority and why the Co-operative bank issued loans to particular people or institutions and so on. He appeared to be bent upon submitting a '*Drain Inspector's Resort*' to prejudice the case of the institution against getting grant from the Governor's fund.

Obviously, that was too much for an independent institution like 'Adarsh Seva Sangha' and we asked him his authority for all this irrelevant and picking-the-hole enquiry which offended him. And he told us that we cannot question his authority which probably in his official arrogance he thought to be limitless to insult anybody. Naturally, we felt obliged to tell him that we were unable to supply further details unless he produces his authority or he may very well withdraw his unwanted enquiry. That was the sad end of the application from the Governor's fund submitted by our institution on official invitation which had all along studiously refrained from taking any Government aid due to demoralising effects of the domination of the present day bureaucracy. That also further explains how arrogant and unbridled our bureaucratic machinery has become these days and how unhelpfully, if not inimically, it behaves towards public institutions unless their authorities are willing to surrender their

institutional independence or please them in other ways.

Railway Travelling

The second one relates to the inefficiency and irresponsibility of railway administration which we had to experience while travelling between Baroda and Rajkot in the Western Railway about the end of May. The first class we were travelling in was crowded beyond capacity by the members of a marriage party from a way side station who obviously were not holding their tickets for the class they were travelling in. At intervals many of the members changed to other compartments and new ones came in. We were pushed to the extent of being deprived of a sitting accomodation for ourselves. On the entry of a Ticket Checker the party members refused to pay excess charge and there ensued a quarrel between them and the Ticket Checker which was later on reconciled. We doubt whether he could recover full charge out of them.

However, when we sought the help of the Ticket Checker to relieve the Compartment of over-crowding he expressed his helplessness to us saying that he has not issued tickets to the four people standing in the compartment. On pointing out to him that he should ask the excess number of people than what is allowed under the rules to go out, his reply was that they do not listen to him and he was helpless. On further pressure from us as to who else should help us if not he, the Ticket Checker quietly walked away and we had to complete the rest of the journey up to Ahmedabad under the greatest inconvenience and discomfort bordering on suffocation.

Continuing the same journey between Veeramgaon and Rajkot at night we discovered that fans were not working in our compartment. At several stations in the course of the night we sought the help of the Guard and the Electricians to start the fans working. But due to some defect which they could not rectify the fans did not work throughout the night. Unluckily we were occupying the upper berth on one of the hottest summer night and had to pass the whole night sweltering and without sleep under trying discomfort. That illustrates growing deterioration in the sense of responsibility of the railway administration to meet the legitimate needs of the travelling public which is part of their duty to attend.

Karera Dak Bungalow

The last of these experiences was typical of complete disregard of public sense of duty, wanton annoyance, arrogant and offending attitude and misuse of public property at the cost of inconvenience to the travelling public on the part of our official hierarchy. We had to put up with it in the company of Shrimant M. N. Shitole, M. L. A. from our area, while staying at Karera Dak Bungalow on a programme of mass contact in his constituency in Karera and Pichhore Tehsils in our district. Shrimant Shitole was acompanied by his family and children besides ourselves and a few attendants. His stay at the Dak Bungalow had to be necessarily long in view of his public engagements extending over a period of 14 days for which special permission was obtained from the highest authority.

We needed 2 suite of rooms of the Dak Bangalow of which one was already found occupied on our arrival by the P. W. D. staff residing in the out-houses in the same compound. They did not like our taking the suite of rooms which was virtually their monopoly for the use of their family, meeting and gossipping with friends and making use of it for transacting official work for which, obviously, it was not intended. From

the moment of our occupation of the Dak Bungalow we sensed an air of resentment and hostility among the local staff as if we had deprived them of the possession of their private property by occupying the rooms in the Dak Bungalow. And their behaviour throughout our stay continued to be offending and annoying to the extreme.

It started with the removal of chairs and tables of the Dak Bungalow for the meeting of their friends under a Neem tree without our consent and then refusing to return them even when not in use. To mark their displeasure for the good services rendered by the chowkidar on the day of our arrival, he was punished by immediate transfer to a distant Dak Bungalow. And, it was the funniest thing we discovered later on that the same Chowkidar returned to his duty on the same Dak Bungalow the day we were leaving. Our servants were refused to use a short cut passage to the town while the residing staff and their men had free excess to it. And finally in order to take back the possession of the suite of rooms used by them before our arrival the Assistant Engineer of the district arrived with his family and we were forced to vacate the room at great inconvenience to ourselves. We had shift to Dinara Dak Bungalow 12 miles away and had to motor to and fro to Karera every day to keep up public engagements.

As if this was not enough, the local staff started using the Dak Bungalow rooms for family residence immediately after the Engineer had left it after a day of his stay. When the re-occupation of the rooms was demanded by us to avoid daily inconvenience of coming and going 24 miles both ways while Shrimant Shitole's party was still staying at Karera Bungalow, the local staff refused unceremoniously and locked it up ultimately to preserve their monopoly and uninterrupted free use for family purposes. As a last resort Shrimant Shitole had to requisition police help to get the room opened for our re-occupation.

In stating these bare facts we had to skip over many a unpleasant detail which showed extreme callousness and disregard to public duty by these officials. They went to the length of tutoring and instructing local Chowkidars and other staff of the two Dak Bungalows where we had to stay to be indifferent and unserviceable to us which tentamounts to open encouragement to indiscipline and disregard to public duty among lower scale staff while harassment to the travelling public including responsible representatives of the people and to put them into unnecessary inconvenience. The worst feature of the present day unresponsive and irresponsible administration is that there is hardly any authority to which all such legitimate grievances arising out of wrong conduct and behaviour of our so-called public servants could be taken with reasonable hope of timely redress.

In the context of these personal experiences of ours in the foregoing it looks like adding insult to injury to demand increasing taxation from the already disgruntled and arritated public to maintain such an unsympathetic and unserviceable administration. The talk of development of the country on the basis of such hopelessly rotten and unsympathetic administration appears to be so much waste of national energy and money which is very much in short supply. What the soul of the Nation is crying for is to build up high moral tone and efficiency of our administrative machinery which task does not seem to be even seriously attempted. Will those directing the Destiny of the Nation pay timely heed to this most urgent and all-important problem of improving national administration and save the country from impending chaos and disaster ?

OPERATION ECONOMY.

By : **MAHESH CHAND**

THE common man, with unsatisfied wants and crippled by false conventions of pride and life, cannot be accused for using his purchasing power for buying goods at higher prices. The common man in the role of "middle man" cannot be accused of behaving to hoard a little stock to secure higher prices and hence more purchasing power. Yet the common man feels the pinch of rising prices and is apt to get enraged at mounting taxes. The situation calls for some cool thinking.

There is a government run by the newly elected representatives though most of them are government-runners of yesterday. The common man is expected to abide by what his newly elected representatives on the government benches ask him to bear. Why should he and some of his representatives revolt at the thought of higher taxes ? Why does he not realise that already his representatives including Nehru and such gentlemen as Jai Prakash Narayan are agreeing and stressing that the solution to the existing problems is neither political nor economic, but moral ?

Action and Advice

There are two very important reasons. One, public leaders cannot long have an effective role if there is a difference between their actions and advices. It is true that in these days, when we want to bring about economic development and econmic prosperity to the doors of the villager and the labourer, capital formation is essential. People should not therefore let loose their wants and rush for securing consumer goods which are in short supply. But it is also true that the leaders do not provide an evidence which would convince the public that the former have adopted austerity in their lives.

When we talk of public leaders our hint is not only to the political leaders—but others too. To give you an extreme example, I am aware of a university teacher who lives a simple life. He has no electric fans, no modern furniture and no modern habits of patronising coffee houses and civil lines. But the other day he mentioned that his colleagues have talked among themselves in derisive terms about his way of life and one of them expressed that such a hand deserves to be de-promoted ! This shows how the wind blows even today. The students who are leaders of tomorrow cannot be expected to adapt themselves to any life of austerity in such environments.

Some academic men like Mahalanobis and Rao have in recent years stressed the need for austerity. At the same time some of them decide to justify proposed higher taxes and privations for the public: presumably they do so to spread out the Master's voice for they are not known to give up conspicuous living themselves.

Operation Economy

It also reminds us of the second argument–the absence of evidence on the part of the leaders to show that they themselves make every effort to reduce inefficiency and to make economy in their expenses. The common man knows from his own experience and what he learns from others how inefficiency, complacency and flattery-they call it buttering–are more conspicuous in office and outside. This means less real products and services–less capital goods and less consumer–goods. It is evident in the increasing money–costs of dams, hydel-plants and mechanical manufactures.

There are so much talks of developing small-scale and cottage industries. There

is also an emphasis that the quality of products and efficiency of production should be increased. But where are the consumers ? Once there was a book on village-exchanges—barter-arrangements in the villages-as organised by Shri S. K. Dey in some Bengal villages. Why are such exchanges not being developed fast ?

However, it is clear that the common man now realises his political power, even though he can exercise it only once in five or seven years. The danger is that this power may become the means to lead the common man from the frying pan to the fire. It is therefore essential that the leadership in our land should realise this and reform itself in good time.

The government would be well-advised to stress economy in expenditure rather than increase in taxation. This emphasis should become a reality and results must be produced to convince the tax-payer. Without it the country may be face to face with a worse situation internally. Let every leader's slogan be "Operation Economy : " that is the key to success and successful leadership.

Recently Sri Jawahar Lal Nehru has said that a reduction in the taxes might win plaudits but it would retard the pace of production and if production was retarded, the resulting scarcity of goods would bring down the value of the rupee. He reminded us of inflation in Germany after the First World War. Then he went on to emphasize our pattern of Socialism and to have nothing to do with cutting of throats, brick batting or slogan mongering. He has of late supported the tax proposals made by his Finance Minister.

One wishes he could see the idea contained in the views expressed by Kriplaniji. The vast economy possible in government administrative expenditure and the tremendous effect on peoples' psychology of the same has been stressed again and again in these pages. The Prime Minister talks of economy through sacrifice by the people. But what about his own sacrifices at the moment. Notwithstanding the work he is doing, where is the living representative of the man who went abroad in loin clothes : who lived in huts : who did his own part of social-service and who went about without conspicuous security measures ? To us at the moment the ruling party appears to be personified in Sri Nehru and that is why we have in the past asked him to make a bold move-take a bold step to go 'simple' in a way so that people do realise his simplicity and emulate it.

"Operation Economy" is in keeping with the Oriental interpretation placed by Rabindranath Tagore on "Civilisation". It is on all fours with the "Simplicity of spiritual expression" which was explained by the poet as the "Highest product of civilisation". It is an aspect of Dharma. wrote Tagore : "Simplicity takes no account of its own values, claims no wages and therefore those who are enamoured of power do not realise its worth." Would not Nehruji show that he is not enamoured of power ?.

THE ROLE OF DEFICIT FINANCING IN UNDER DEVELOPED COUNTRIES.

By : **SUNDAR DASS**

THE deficit financing implies that the total receipts of a government fall short of the total outgo on all accounts, both on revenue and capital. This difference is made up by running down the cash balances or the issue of fresh currency or borrowing from Central bank. This term is different from the deficit budgeting which is a narrower term. The deficit budgeting implies that a government budgets for a higher expenditure than the revenue it hopes to raise on Revenue Accounts during the course of the period of budgeting usually one year. The balance is made up by borrowing from the public only.

Deficit Financing Versus Deficit Budgeting.

The deficit budgeting as a means of achieving full employment is suitable in a developed economy. Unemployment in developed economy results from a deficiency of demand which is always accompanied by idle savings and idle production resources. In this type of economy the deficit budgeting can activate the idle savings and thereby utilize the idle resources and unused capacity of plants. In this way, the unemployment can be reduced without the danger of inflation until the full employment is reached.

In under-developed economy, the unemployment is of chronic nature and is not due to the deficiency of demand. It is not accompanied by idle resources and unused capacity of plants. Here the problem is one of the shortage of savings in relation to the needs for economic development ; not one of idle savings and idle employable resources of production. The only resource in abundent supply here is unskilled labour. Though, the scope for economic development is vast, but the unskilled labour cannot increase production without the help of some sort of capital goods. To get them, savings are needed which are extremly inadequate in this area. The savings are in short supply due to very low level of real income.

The disparities that exist in the level of real income of different countries will, nevertheless, help us to understand the position with regard to savings of under-developed countries. A report on economic condition of the world, published by the United Nations Organisation, reveals that 67% of the world's income goes to high income countries comprising 18% of the world's population. The group consists of U.S.A. Canada, Western Europe and Newzealand. 18% of the worlds' income goes to the middle income group consisting of 15% of population. This group includes Argentina, Uruguary, South Africa, Israel and some countries of Eastern Europe. Lastly, the lower income group earns only 15% of the world's income but consists of 67% of the world's population. It covers most of Asia, South-Eastern Europe and Latin America, the whole block of under-developed countries. Out of this 15% income, the basic requirements are to be met. From these facts, it is not difficult to imagine why valu-

ntary savings are practically nil in this area. The economies of under-developed countries are in a vicious circle. Savings are less due to low level of real income and the low level of income is attributed to low rate of capital formation which is solely dependent on the rate of savings. Hence unless the rate of savings is pushed up, the economic development of the under-developed countries is not possible.

So here the problem is of creating savings either forcibly or involuntarily. The forced savings are created through taxations. The level of taxations should be raised to such an extent that the real resources should be shifted from consumption to production of capital goods. This is a very unpopular method as it will directly lower the standard of living of this area which is already on a subsistence level. This method will be very much opposed by the people of the region. The other alternative is of creation of involuntary savings. Involuntary savings are created by inflating prices and thereby reducing the tevel of consumption involuntarily. The governments of the region should hammer out development plans and finance these plans in part through expanding more currencies. This will result in raising prices which will, in turn, shift the resources from the consumption to production of capital goods. It is nothing but the application of deficit financing to the implementation of development plans of the region.

This is a policy which should be effected with great care and caution. Deficit financing always implies some sort of controls on an economic system. Otherwise it is bound to create conditions of destructive inflation, which dislocate the economic structure of a country. The deficit financing generates inflation in two ways: (a) by making a net contribution to the total effective demand of a community and (b) by increasing the liquidity of banks. It is desirable that these sources of inflation connected with the policy of deficit financing should be properly controlled with monetary and fiscal measures otherwise this policy cannot succeed in developing the economies of the area.

AGRICULTURAL PROPAGANDA AND EXTENSION WORK

By : **H. M. DESAI**

ACCORDING to the American ideal, propaganda and extension work aim at educating the farmer in the art of helping himself. The duties of a field worker in U, S. A. are therefore purely educational. He uses all the modern methods of educating the farmers and helps them to organise themselves and work jointly. As a rule, a farmer in U.S.A. is a member of one or more organisations and seldom functions singly either for purchase or sale. Their marketing organisations are very large. They believe in large business efficiently managed. They believe that, if marketing is to be done jointly the product must be of superior quality and of uniform standard. Inferior quality products put on the market in bulk depress the ruling market price. Usually in the marketing organisation 'The one variety community' is created in the area of its operation.

All this is possible because a farmer in U. S. A. is educated and carries on his

farming as a business and produces for the market.

As the settlements of farmers in U.S.A. are mostly community wise having the same economic interest, it is easy to form powerful organisations for collective bargaining in either economic and/or political sphere.

Their counterpart in India live in quite a different environment. In India the settlement is on a village basis where most of the farmers have dwarf farms with the result that the farmer lives in poverty. He seems to have lost all interest in life. It is difficult to organise him for any programme of developmental work. Main planks of any effective and lasting propaganda work are (1) Concentration and (2) Continuity. Both these are inoperative on a general basis in our rural areas.

In any village there are few farmers with means, few living on the border line of poverty while a vast majority of them live in unspeakable poverty. Introduction of any improvement, therefore, travels fast among the economically better off group of farmers and then stops abruptly. It is difficult if not impossible, to make any headway among the uneconomic group of farmers. This is especially so, if in the introduction of that improvement cash expenditure is involved.

Accordingly, meagre means at the disposal of a District Agricultural officer and a huge uneconomic group of farmers in rural areas made in the part the propaganda and extension work an uphill task. These difficulties were well known to administrators and to Government but were generally ignored.

Instead of discussing this question in its wider aspects it is proposed to give personal impressions and experiences of the writer as a member of the agricultural department and also as a district worker.

The District Agricultural officer was a member of the subordinate service of the agricultural department who started his career on Rs. 40/-. He was on probation for three years and got yearly promotion of Rs. 10/- which raised him to Rs. 60/- at the end of a third year. After three years of probation if his work was found satisfactory and if there was a vacancy, he was taken up in the final grade of Rs. 75-5-100. The next promotion groups were Rs. 105-5-140 and Rs. 150-5-200. The highest grade was of Rs. 220-40-300 with very few posts. Only very fortunate ones were admitted to this grade. The pay scales were revised after the first world war in which the first grade remained the same but the lower ones were raised a little and the start on confirmation was raised from Rs. 75/-. to Rs. 100/-.

The D.A.O. was a touring officer. He was expected to tour for about three weeks in a month. Most of the D.A.O's were drawing pay varying from Rs. 140/- to Rs. 200/-. As a propaganda officer he was expected to tour and spend nights in villages. This he could hardly do because being a low paid officer, he could not afford to engage a cook. Only very few D. A. O's toured with kits and spent nights in villages.

As a routine measure, the D. A. O. visited the taluka places and a few big villages where there was facility for spending the night or else he returned to the head-quarter daily.

The result was that, the D.A.O. was not always able to visit the villages in his charge and did not come in contact with the farmers. The result was that propaganda work became merely superficial.

With the establishment of the Indian Central Cotton Committee both the research work and the seed distribution

work of improved varieties of cotton was well-organised. A separate staff, mostly financed from the I.C.C.C. funds, was appointed and the work progressed satisfactorily. In general, except the cash crops no other crops including the food crops received any attention worth the name from the agricultural department.

In the Surat and Broach districts, the distance of sowing a cotton crop was about 18" to 24". On the Surat farm demonstrations were held to show the advantages of wider sowing. As a result the distance of sowing increased from 3 feet to 4 feet and to 5 feet and over.

These demonstrations resulted in progressive farmers adopting the improvement which slowly spread on a general scale. In the same way the ground-nut crop was introduced which spread in suitable areas. These are only the examples of organised demonstrations on the Government farms where certain tangible results were achieved in olden days.

Demonstrations on farmers' fields in the district were never popular. With the help of the Revenue Officers a few farmers, who had very little interest in the item of demonstration could be gathered.

To organise demonstration plots in the district was also a difficult task. Generally no farmer came forward to offer his field for the demonstration work as he considered it to be a mere bother. Personal influence was required to be used for arranging field demonstrations on farmer's fields. Similarly the introduction of improved seeds and manures also required personal influence. Persuation was needed for their trial, the introduction of test and further expansion work.

As regards the advisory work, no body consulted him either in person or by correspondence. After the improved seeds of local crops became available, as a result of the botanical improvement of crops, there were a few calls at the D. A. O's office.

Due to public indifference the D. A. O. usually became a pessimist and lost all hopes about the improvement of the farmer or his farming methods. When D.A.O's met, there was no word of cheer but always a depressing talk about their experiences. There was also no word of encouragement from the supervising officers but always scolding. A visit of a superior officer was not helpful but mostly irksome. He had neither patience nor sound local knowledge to become helpful.

The D.A.O. who had entertained high hopes in the beginning of his service and was fired with necessary zeal to do his good bit in the service of the country turned cynic at the close of his service. The D.A.O. at the time of his retirement was of the opinion that nothing can be done to improve the lot of the farmer in the present social and economic set up in the rural areas. This was the effect of all the unfavourable factors (i.e. Technical, Social and Economical) operating together to defeat the efforts of the D.A.O. Of the technical factor, want of suitable items of programme embracing most of the people of the rural areas was the weakest. Another weak spot was the want of strong reseach programme to feed the district work. The D. A. O. had also no fund at his disposal to carry on the work he considered necessary.

In such a depressing atmosphere, however there were a few D.A.O's who struggled hard and registered some progress. In this period, distribution of improved cotton seed in the cotton growing areas of the State, better technique of growing sugarcane crop in the Deccan canal areas, introduction of ground-nut

crop, introduction of improved plows in the Deccan areas, etc., were some of the important introductions with wider applications.

To get a clear picture of the D. A. O's work an actual example will be more illustrative than a mere general description. With this end in view, personal experiences of the writer of this article are recorded here.

After his graduation in 1917 he was taken up as a demonstrator in agriculture in the Agricultural college, Poona, and was raised to lecturership. This position he occupied till he was transfered to the districts in the year 1931. As a teacher in the college he had to accompany the final year students on their annual tours with the Professors of Agriculture. While on tour, he had an opportunity to visit most of the districts and study the district work in progress on the spot and to come in personal contact with the D. A. O's. These frequent visits to the districts gave him an opportunity to study the intricacies of the district work and the difficulties of the D. A. O's. These visits in addition gave him an apportunity to observe the human aspect in the district propaganda work and to see how each of the D. A. O's handled it with the meagre resources at his disposal but with great personal skill.

On his appointment as a district officer of the Kaira District with head quarter at Anand, the first thing he did was to survey the district in order to enable him to understand both the people and their problems. He also studied the work in progress on the Nadiad Agriculture station.

The district staff consisted of himself, a peon and a field Kamagar appointed along with him. The post of an agricultural assistant for the horticultural work was added later on. When he took over the charge of district work, the distribution of G. 6 variety of tobacco was in progress but its demand was on the decline. Trials of introduction of mosambi fruit crop were in progress at seven centres in the district.

A brief description of the important items of work undertaken by the writer during his stay in the district for about five years and the progress achieved under each item is noted here.

A. Organisation Work :—There were two Taluka Development association in the district. The writer approached the District Deputy Collectors and interested them in this work. By their help he organised T.D.A.s. in all the seven talukas of the district. This helped him to contact the leading farmers of each of the taluka of the district.

B. Holding of Classes :—In order to contact farmers in the villages three day's classes were held in a selected village in a taluka in the hot season when farmers were free from the agricultural work. Discussion on various topics of agricultural interest were held. The improved methods of cultivation, method of control of pests and diseases and such other items of local importance were discussed and demonstrated. Methods of budding and grafting were also taught. Preparations of jams and jellies were actually demonstrated to the women folk of the villages. These classes became very popular and the demand for these increased. This is a fruitful line of activity of the district propaganda and extension work for mass contact and requires to be taken advantage of.

C. Classes of the revenue staff :—To widely advertise the agricultural department and its working, the Collector of the district was requested to hold a class of about four days duration, at a central place. Such a class was held at Nadiad

where 500 to 600 people attended. All the rural development departments took part in this class. This class was very successful and in this wide contacts were established in the rural areas of the district.

D. Extenslon work :—In the Kaira District a cuminjiru crop is one of the important minor money crop. This is a cold weather crop and is invariably affected by a powdery meldew desease, locally known as *Chharo*. There is a specific remedy against this disease which consists of dusting the crop with fine sulphure dust just before flowering. Inspite of this remedy, for want of propaganda work, this crop was affected every year by this disease.

Before the sowing season we earmarked a few villages where the jiru crop was grown intensively. In the jiru season we went to these villages to organise the demonstration plots against meldew attack. Nobody offered a plot for the demonstration purpose, inspite of clear understanding that, if there was any financial loss due to our treatment, it would be made good. After a great deal of persuation a progressive farmer offered his plot which we gratefully accepted for our propaganda work. During the year there was a severe attack of meldew and except the treated plots all others were greatly damaged. This proved to be a great success and in the next two years almost all the jiru crops of this and round about villages came under the treatment of dusting the jiru crop with sulphur dust.

Side by side we trained some of the village boys in the operation of dusting. Dusting machines and sulphur dust were kept with one of the social workers in the village. The dusting became popular and with the facility provided on the spot every farmer took advantage of it by paying a fixed cost of dusting. Some people took up this dusting work as a business and though it is now over 15 years from the time the propaganda work was started it is still continuing. This provided us with an example as to how the propaganda work should be organised and extended so that it may endure even after the help of the agriculture department is withdrawn.

E. Control of wild animal :—In the Kaira District there was serious trouble from *Nilgai* in the *Charotar* area. Farmers complained bitterly aganist this trouble but were not prepared to organise the compaign because of the religious beliefs of the people. The villagers were contacted and they promised help if a shikar party was organised by the department. The party was formed and the work was organised which was very successful to the entire satisfaction of the farmers.

F. Distribution of seeds and Manures:- Improved seed of tobacco was being distributed under a plan but this was not making any progress. After studying the tobacco tracts of the district it was realised that, this variety i. e. G. 6 was only suitable for growing as an irrigated crop under brekish well water. For other areas the variety was not only unsuitable but gave produce of inferior quality. The tobacco in the District was mostly grown as a dry crop for which a separate variety was needed. When improved seed of such a variety i.e. K49 became available from the Nadiad farm the distribution work of improved seeds progressed extensively. We also distributed improved seeds of rice, wheat, jowar, bajari etc., brought from other tracts. Our experiment was that such seeds should not be introduced unless given sufficient preliminary trials in the district.

G. Broach Harrow :-This harrow on trial was found very useful for this

district. Wherever the work of this harrow was demonstrated a demand was created. Blades of these harrows were ordered out from Broach on a large scale to meet the demand. Later on smiths came in this district to provide service on the spot.

H. Introduction of Fruit crops:–Lemon was a very successful crop in this district. The problem with this crop was that of marketable surplus in the harvest season. The mosambi crop though successful yielded fruits that were insipid and without juice. Now here was a problem.

These problems were reported to the Horticulturist to the Government of Bombay for study and research. The lemon problem is still there and the mosambi crop is pushed out of cultivation. We introduced the cultivation of Basarai banana and of papaya. Both of these crops have taken firm roots and have provided cheap fruits to the poor population of the district.

There are over a lakh of mango trees in the district. Mango fruits, however, from most of these trees are inferior in quality. Campaign to side graft these trees with superior varieties, was organised but was not pursued. If these trees are rejuvinated it will add substantially to the income of the farmer of the district and people will get fruits of superior quality for consumption.

These examples will suffice to illustrate the nature of the district work, psychology of farmers and the means and methods at the disposal of the D.A.O., for carrying out this work of varied nature. Somehow the idea prevailed that there were enough goods but no sale for want of salesmanship. Most of us considered this view erroneous.

During the war years, 'Grow more food crops' campaign was organised with a definite object of increasing production of food crops. The material and the means remaining the same the work was intensified by increasing the district staff and providing credit facilities for sale of seeds and manure. After spending crores of rupees in the compaign, it was pronounced to be a failure and its place is now taken up by 'The First' and now the '2nd Five–Year Plan.'

Under this plan the rural development work is taken as a whole. Increasing the agricultural production through co-operative farming is a part of the programme of the plan. The instruments for these are N. E. S. and C. D. blocks. There are enough facilities and men and means are available under these schemes. Quantity is enough though quality may be wanting. We believe, that though the proposed edifice is a big one the foundation is weak. As far as the programme of the agricultural improvement in concerned we may say with the least hesitation that the supporting reseach programme is very weak, organisation is heterogenous and means and method are not realistic.

We are interested in the development of the countryside and if this is achieved through N. E. S. and C. D. we will be only too happy.

FOOD PROBLEM--SELF SUFFICIENCY TO SHORTAGE

By : **G. KRISHNA**

ONE five-year plan has ended and the other has already begun. And, yet the food problem still dominates the economic scene in India. Of late there have been persistent reports from many parts of the country about shortage of food grains and soaring prices. Apart from wide-spread famine conditions and starvation there are instances of mass agitations and even of raids on godowns and shops.

The rise in prices of food articles between the period February 1956 and February 1957 was about 18 percent. Strange enough Government dismissed such initial reports as baseless. When facts proved irrefutable there were frantic efforts and ad hoc measures to meet the challenging situation. Official conferences were called and production targets in the Plan were revised upward. The White Paper on Budget 1957-58 states, "The overall index of agricultural production declined by nearly 2.4 percent from 116.4 in 1954-55 to 113.7 in 1955-56 mainly due to less favourable weather conditions. Food grains output which had already declined in the previous year to 66.5 million tons from the record level of 68.8 millon tons in 1953-54 declined further to 63.4 million tons in 1955-56."

The dependence of Indian agriculture on the vagaries of nature is well known and there is no point in blaming the Government for shortages on account of natural calamities. But what is the purpose of the Plan ? It is obvious that agricultural production especially of food grains should show massive and spectacular increase if the basic conditions for Second Plan are to be satisfied.

The authorities owe an explanation as to why the slogan of self-sufficiency in the First Five - Year Plan was not carried to the Second Plan to one of producing surplus. The population of the country is increasing at a rate of 1.25 percent a year. With the increase in the national and per capita income demand for food was bound to increase. Extensive cultivation is a costly long-term proposition. But with a little more foresight and a sense of urgency at concerned quarters, the country would have averted this crisis. Further in the peculiar condition of the administrative and political set up of the country, the burden and responsibility of implementing the Plan are on States and strangely enough they have shown little capacity and initiative to increase food production. They always approach the Centre for more and more allocation who in turn is compelled to seek increasing imports from abroad. States are not merely distributing agencies. They have their own responsibility in the matter, not only to meet current requirements but to aim and plan for State and regional self sufficiency and surplus of food grains.

Our agricultural productivity is one of the lowest in the world. With a little more intensified effort on the part of the States it should not be difficult to plan an increase of additional 10 million tons which along with the 10 million tons of imports will enable the country to go through the Second Plan period. Isolated shortages are one thing but persistent downward trend is another and that is exactly what the country has been witnessing during the last three years. The planners should have anticipated the likely pressures in the economy—some of which are inherent in the situation while others are the result of development. At least when production started declining, steps should have been taken to reverse such trend.

In any scheme of planned development it is of utmost importance to bear in mind two factors of fundamental significance. Firstly, half of our national income is derived from agricultural products. Secondly more than 60 percent of the per capita income of majority of the population are spent on consumption of food. No substantial progress is therefore possible without steady and simultaneous increase in agricultural production. Violent fluctuations of agricultural prices will ultimately upset the cost estimates of the Plan itself. Rising food prices will bring down the standard of living and thus defeat one of the major objectives of this Plan. Prices can be effectively controlled only by making provision for adequate supplies.

As the country is already confronted with the problem of foreign exchange our import capacity is very limited. Apart from that even if we find adequate foreign exchange to pay for the imports, it is a national waste as we have plenty of 'idle capacity' in agriculture which can with little investment and effort be profitably exploited. This would provide additional employment and increased income to agriculturists.

Closely allied to the problem of increasing production is the problem of getting available supplies to places where and when they are required. Besides one is not sure whether all the available supply is brought into the Market. Since the rate of increase in food grain prices is not related to the actual shortage, it is necessary to ensure that there are no anti-social acts in between. Steps should also be taken to provide all facilities for the quick movement of food grains to areas in short supply and to reduce wastage to the minimum. For instance it is estimated that about 3.5 million tons of food grains, or 5 percent of the total production in India is irretrievably lost due to damage and deterioration while the grain is in storage.

The food problem will not bear ad hoc solutions or piece-meal efforts. It requires short and long term measures which should be implemented with a sense of urgency and determination. On a long-term basis, the only solution is more production with no unmanageable increase in the number of mouths to feed. On a short-term basis, hoarding must be made firstly impossible by credit control leading to monetary stringency and secondly unprofitable by releasing stocks held by Government through fair price shops, whose number if necessary be increased. As yet, no suggestion has been heard for the imposition of controls and rationing. The report of the Committee appointed to go into the causes for rising food prices and to suggest remedial measures is being awaited with interest.

FOOD AND HORTICULTURE

By : **DR. G. S. CHEEMA**

INDIA has been predominantly an agricultural country, but the patent fact is that she is not able to catch up with her food requirements. The Planning Committee is emphasising that food production should be stepped up by 30% during Second Plan period.

It must be remembered that "Land, Climate and People" are mostly responsible for rural prosperity. In recent years, due to increased interest in Industrial development, the intelligentsia and capitalists have moved from the rural area to towns. This has made the agricu-

ltural sector poorer and more ignorant. The investment in equipment is insufficient and ' productivity ' of labour is low. Hence present food deficit. Of course, increase in population, weather-inclemencies and several other factors also may be concerned in our failure to achieve self-sufficiency.

One of the important vaccums in the system of food production schemes is the neglect of fruit and vegetabe production, and it is only in this field that educated and resourceful cultivators are available. Due to their vested interest they cannot leave the countryside. Uptil now at no stage of plan any effort is made to increase fruit and vegetable production, and it is only in this field that spectacular results are possible. Horticulture is a great filler and employer. If therefore proper attention is paid to this development substantial percentage in the planned increase could be achieved.

One of the most important Horticultural events of the year is an attempt to organise the Bombay State Horticulture association. Thanks to the untiring energy and initiative of Shri B. R. Borawke in this direction. This association after prolonged deliberations has crystalised the Horticulture problem as follows :—

1. There is need for developing productivity and resistence to disease strains of fruit and vegetables.

2. The bus and railway communication must be improved.

3. The wholesale fruit market must be regulated.

4. Storage and preservation must be encouraged.

5. Long term loans for laying new orchards and improving existing ones may be granted.

6. The advisory services must be strengthened.

7. Co-operative efforts should be encouraged.

To carry out the programme combined effort is needed both on the part of Government and fruit growers. How could such a co-ordination be brought about ? It is like this. Growers must be organised. Government agency must give fillip to the movement. This agency could be provided by the establishment of an all-India Horticultural Board. Whatever planning funds are sanctioned should be appropriated through such an agency ? This agency can survey area and encourage people to lay out new orchards. This will provide the surest way to increase production of food and provide employment at the rate of two men per acre.

SOME ASPECTS OF MARKETING IN LARGE SCALE FARMING

By : **A. N. SHARMA**

MARKETING plays a vital role in national economy. It is becoming more and more complex day by day. The old barter system has gone with the old days because we are marching towards specialization where a man does not produce many of the items of his requirements and for them he depends on others. In this article we want to compare some aspects of marketing between large and small scale farmers i.e. how far large scale farmers are better off than the small scale ones.

Method of marketing :—Though there are three or four methods of marketing but the big farmers generally take their produce to the well known shops in the grain market. Either the commission agents themselves purchase their produce or sell it to the customers. Regarding the payment they either make promise to pay on some future dates or pay at-once. But these farmers generally want to have a cash payment because some farm needs are to be met. They can even sell their produce at a cheaper rate (1 or 2 annas less per maund) than to go without money. It is because the farm expenditure is more or less a regular feature whereas farm incomes are seasonal and hence irregular.

The following table shows the income and expenditure of B. R. College Farm (Bichpuri) during 1954-55.

Months	Income (Rs)	P. C.	Expenditures (Rs)	P. C.
July	13485-15-6	18.1	9412-12-9	13.6
August	659-15-3	0.9	3929- 5-9	5.4
September	4783- 0-0	0.4	7443- 1-6	10.3
October	3995- 5-0	5.4	6224- 4-3	8.6
November	17857-13-0	26.2	7445- 8-0	10.3
December	2878-14-0	3.7	3596- 3-3	4.9
January	3102- 1-6	4.2	8114- 4-0	11.2
February	6732- 1-0	9.1	5883-13-0	8.3
March	6799- 7-6	9.2	7867- 8-0	10.8
April	3291-12-3	4.3	3326- 3-9	4.6
May	4619-13-0	4.2	2706- 8-6	3.7
June	5549- 9-0	7.3	6174- 9-3	8.6
TOTAL	73745- 1-0	100.0	72024- 7-9	100.0

The above table clearly shows that from income point of view there are only two months July and November. In the former case the income is from the harvestation of Rabi crops and in the latter case the income is from the Kharif crops. July, November, February and May are the months in which the income supercedes the expenditure otherwise in rest of the months expenditure is more and regular.

So large-scale farmers (and some believe small-scale farmers also) have a peculiar experience. Before the income is received or better to say before the crop is ready for sale piled up demand for money stands and therefore the immediate sale becomes necessary.

Price obtained in comparison to others :—These farmers generally are able to get a better price than the ordinary small scale farmers. It is so because :—

1. These farmers are generally well informed of the market situation.
2. They generally sell in greater volume.
3. They have good bargaining power, and
4. They have a staying power.

For the sake of illustration we have conducted two case studies of marketing Gur. One is of the ordinary cultivator (Badri Prasad) of Fatehpur Sikri (Daura village), 24 miles away from Agra, and the other is of a big farmer (Chidda Lal) of Kailash village nearly 10 miles away from Agra market. Both of them took Gur to Motiganj market of Agra on the

same date. The quality of Gur was the same. The latter took 100 mds. of Gur, while Badri Prasad the ordinary farmer took only 30 mds. Badri Prasad sold his produce at Rs. 11/4/– per md. while Chidda Lal could get Rs. 12/–/– per md.

A detailed summary of the cases is given below :—

BADRI PRASAD

Items	Rate	Weight (Mds)	Total amount (Rs.)	Remarks
Octori Charges	As –/1/– per md.	30	3/4/–	
Rly. ticket			–/10/–	one side ticket from village to Agra Fort is As. –/5/–
Brokery charge	As –/5/– per Rs. 100/– 9 P. per	Rs. 337/8/–	1/–/10	
Labour charge	Katta of 1¼ md.	24 Katta	1/2/–	
Muddat	As 2/– per Rs. 100/–	Rs. 337/8/–	–/6/9	
Dharmada	6 P. per Rs. 100	Rs. 337/8/–	–/1/8	
Cart charge	Rs. 6/– per md.	30	11/4/–	
Total			17/13/3	

Cost of the Gur Rs. 11/4/– 30 337/8/–
Net income = (Rs. 337/8/– Rs. 17/13/3)
= Rs. 319/10/9
Value received per maund Rs. 10/10/8

CHIDDALAL

Items	Rate	Weight (Mds.)	Total amount (Rs.)	Remarks
Octori Charge	As –/1/– per md.	100	6/4/–	
One gallon petrol	Rs. 2/13/–		2/13/–	He came by car.
Brokery charge	As 5/– per Rs. 100/– 9 P. per	Rs. 1200/–	3/12/–	
Labour charge	Katta of 1¼ md.	80	3/12/–	
Muddat	As. 1/– per Rs. 100/–	Rs. 1200/–	–/12/–	
Dhar-mada	6 P. per Rs.100/-	Rs. 1200/–	–/6/–	He has his own cart.
			—	
Total			17/11/-	

Cost of Gur Rs. 12/– 100 Rs. 1200/–
Net income = (Rs. 1200/–/– Rs. 17/11/–)
= Rs. 1182/5/–
Value received per md. Rs. 11/13/2.

We see that the big farmer gets a much better price than the small cultivator. Mr. Chidda Lal gets a margin of Rs. 1/2/6. It is not only the case with Gur or with Agra market but such phenomenon can be observed in most of the commodities and also in all the markets.

Marketing Problems :—The problems faced by these farmers are more or less the same as those faced by the small farmers. The only difference is that of degree, that is they also do not get the full share of their produce for what they deserve. Though they are much better

off than the ordinary cultivators yet they are also weak in certain aspects which will be discussed below :—

1. The most important thing to be considered is that, ordinarily it is believed that large-scale farmers have much better staying power and that they can always get the advantage of off-season high prices. This is unfortunately not the case in agriculture. As noted before, in agriculture the incomes are irregular and seasonal, the demand for money accumulates before a crop is ready for harvest. Hence even the big farmer is compelled to sell immediately. No farmer however big or rich can afford to wait for the highest price and carry on farming, since that is a very uncertain factor. This must continue so long as the individual farmer has to deal in the open market. This can be improved only by the institutional approach, where farmers could deposit the produce and get a part of the price to carry on farming, and get the remaining price when the commodity is finally sold.

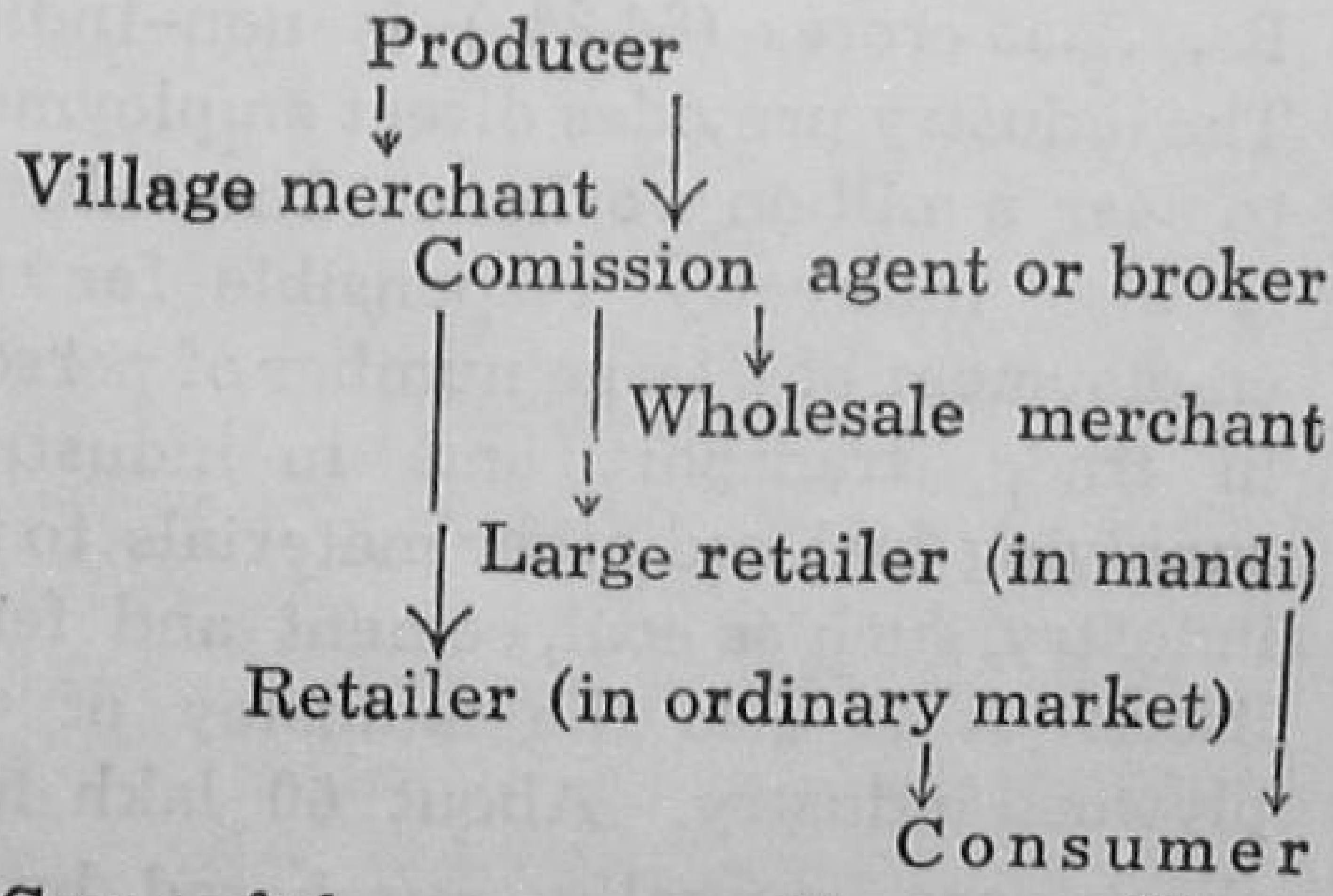
2. **Inadequate and bad storage facilities** :—The next most important thing is the inadequate and bad storage facilities available even in those cases due to shortage of buildings and also due to shortage of finances. In most cases the producers have some storage accomodation in the farm of pits and Khas and also in Kothas and Khattis. But there is a general inadequacy of good storage facilities. This is primarily because of the large bulk of the farm produce.

Secondly, the methods of storage do not completely protect the produce from the dampness-weevels and vermins such as rates and white ants. It is because of the bad types of storage structures. This is a quite serious situation, and the government should pay attention to the construction of stores just as to the construction of irrigation works. Every year a considerable part of the produce gets spoiled during the process of storage. The country cannot afford it.

3. **Inadequate and defective means of communication and transport** :—

Though most of the big farmers have tractors with trollies and bullock carts etc. but they are not of great value because roads are not good and become hopelessly bad in the rainy seasons. Regarding the transport, those who have gone through yamuna Road of Agra must have thought that there should not be any scarcity of transport services because he must have seen hundreds of trucks standing and more than forty transport companies on both the sides of the road. But it does not give true picture because, these transport services are absolutely absent in villages and moreover the frieghts are very high. Similar is the case with railways. They have not penetrated to the villages and the services are also costly. In the present budget (1957-58) the fares of the goods train have further increased which will mean "discouragement to poor".

4. **Long chain of middlemen**—Major part of the produce is sold in villages. The result is the intervention of middlemen between producer and the final consumer and each of them gets his reward. The following diagram shows the extent of middlemen in case of Gur only.



Some of them are superfluous as village merchant, broker etc. and also their

services are too costly. The various marketing reports published by the Govt. of India are quite conclusive on this point, and the need of eleminating the unnecessary links in this chain has long been established. But practically nothing has been done so far.

5. **High cost of marketing** :—Cost of marketing is too costly as arhat is paid to commission agent, brokery to broker, tulai for weighing the produce, palledari is paid for various minor operations (unloading, preparing the produce, filling the bags etc.) and muddat is charged for making the cash payment. It is all about those charges which are paid in cash. Regarding the kind charges 'Karda' and 'Dharmada' are well known, the former is charged for impurity as dust and dirt while the latter for religous purposes. The great objection to the market charges lies not only in multiplicity but also in the fact that they are not clearly defined and specified. The charges vary from market to market. The cost of marketing, though varying from commodity to commodity is too high. The need to reduce and regularise them have long been established. But here too nothing has been done so far except in a very few cases of regularised markets.

We endorse the need for reducing and regularising the market charges. As when big and educated farmers are cheated by the commission agents what to say for small and illiterate cultivators. It requires much greater attention on the part of the Government than has been given so far to the provision of storage, improvement of transport facilities (particularly roads) and the regulation of markets.

INDIAN TEA INDUSTRY

By : **Prof. PRAKASH CHANDRA TRIPATHI**

Importance

THE industry plays a vital role in our national economy. At present there are more than 6,000 tea estates in India comprising about 8 lakh acres with a total investment of Rs. 113.06 crores. Of this Rs. 40.51 crore (35.8%) is Indian and Rs. 72.55 crores (64.2%) is non-Indian. The industry provides direct employment to over a million workers. The industry is also indirectly responsible for the employment of a large number of persons in trade, transport and in industries supplying fuel and other materials to the industry, such as coal, cement and fertilisers. It is also the mainstay of our plywood industry. About 60 lakh tea-chests are annually purchased by it. The industry is a substantial earner of foreign exchange. Exports during 1955-56 amounted to 404 million lbs. valued at Rs. 109.14 crores, as against 459 million lbs. valued at Rs. 147.74 crores in 1954-55 [1]. The industry has also provided by way of Central excise duty and export duty about Rs. 22 crores to the Central Government annually.

Historical Background :

During the eighteenth century, the East India Company held a monopoly of the British trade to China, the principal item of which was the importation to Europe of Chinese tea. But with the removal of the Company's monopoly of the China trade in 1833, the cultivation of tea was started in India by the Government as an experiment in 1834. This

1. The Journal of Industry and Trade, Oct. 1956.

experiment was undertaken as a result of a minute recorded by Lord William Bentinck, the then Governor General of India. It was urged in that minute that great advantages would result to India, in commercial point of view, from the success of the scheme, and that it would also place England in an independent position in respect to China. A Committee of 13 members was appointed to start the scheme. Two of the members of the Committee were Indians and the rest were Europeans.

The Committee obtained seed and plants from China together with several Chinese labourers and experimental gardens were started at a number of places along the south slope of the Himalayas. The Committee also discovered that the tea plant grew wild over a tract of Assam extending from Sadia to Yunan, the frontier of China and to this region special attention was devoted. The tea plantation in India was, therefore, started with three types of plants: the Chinese type, the indigenous type and the hybrid type (a mixture of the first two).[2] Some consignments of the tea thus produced in Assam were then sent to London for sale. These consignments proved of excellent quality and fetched a very high price. The prices commanded by this tea were so good that the experimental tea cultivation in India attracted the attention of British capitalists and in 1839 a company known as the Assam Company was formed in London with the capital of £ 200,000, for the growing of tea in Upper Assam. The Indian Government transferred to this Company most of its gardens and nurseries. Thus the Assam Company had a virtual monopoly of tea production during the first decade, but: its management was so ineffective that it not only paid no dividends out of earnings for 13 years, but at one time had dissipated all its capital. The tide then turned, however, and in the early fifties it began paying handsome profits. This led to a great expansion of tea planting. The principal development was in Assam—at first in Upper Assam, but later in Sylhet and Cachar, in the lower part of the province and in the neighbourhood of Darjeeling. Many more companies were registered in England largely by retired European officials or army officers to take over at fabulous prices most of the already established plantations.

However, the growth of the industry has frequently exceeded the growth of demand and this has brought several periods of rather acute depression. Thus over extensions resulted in glutted markets and the last decade of the nineteenth century was a lean one. Better times set in, however, and inspite of tea control during and since the World War I, and a few bad years, tea companies made good profits during the post-war periods.

The partition of the country in 1947, however, came as a particularly disturbing factor to the prosperity of this industry. North east India, the home of this industry, was hitherto one economic unit. Now because the industry was subject to dual control by India and Pakistan, the unified structure and organisation of the industry was broken and uniformity of development was lost. Transport bottleneck was another problem. Prior to the partition the two ports of Calcutta and Chittagong now in

2. "The China type is very hardy and yields under circumstances that would be fatal to the more delicate indigenous or the hybrid type. But the China type produces a hard leaf which costs more in manufaturing and is of less commercial value than the tea produced from the indigenous or the hybrid types. The hybrid type has, therefore, become popular in India." Economic Geography of Indian Republic- Dr. R. N. Dubey.

India and Pakistan respectively handled the bulk of the export. A simple arrangement was followed whereby tea grown in Assam found its way to the port of Chittagong while tea grown in Sylhet as also the northern areas of the present State of West Bengal was sent to the port of Calcutta. This arrangement resulted in maximum economies in transport costs of tea, as tea was sent from the gardens to the nearest ports. But the partition changed the entire set up. It was found that Indian tea could not get effective priority in booking, particularly in view of the new traffic which the Pakistan railway system had to carry, because of the diversion of jute from Calcutta to Chittagong. The new Assam-Bengal rail link solved the problem of transport to some extent.

Then came the tea crisis of 1952. It was the outcome of the following economic forces :—

(1) There was the announcement that Britain would abolish the subsidy of 8 pence a pound, which she had granted on all teas sold in the United Kingdom. Buyers wondered whether the public would buy as much tea as formerly; played for safety, and kept their bids low.

(2) World output of tea exceeded world demand. A heavy overproduction was calculated and this led buyers to limit their bids still further. This coincided with the world slump in almost all commodity markets following the cessation of stock-piling. The need to work off stocks acquired at the time of Korean crisis curtailed overseas purchases.

(3) There was de-rationing in England which led to a fall in demand. This is because articles which are rationed have an appeal, merely by reason of their being rationed. The housewife has her tea coupons, and it is a point of honour to use them, even though the tea which she buys goes to her already wellstocked cup-board. But once rationing is abolished, the commodity loses something of its charm, while the hoards need be hoarded no longer, and can be brought into current use. So it was in Britain ; the abolition of rationing had the initial effects of decreasing demand and of bringing into use the savings of a decade of rationing. With demand fell prices also.

(3) There was a substantial increase in tea garden wages due to the cruel coincidence of the Minimum Wages Act and a heavy outlay by tea gardens upon food stuffs for tea garden labour. The amount of capital locked up in food stuffs was enormous and the extra wages might cost the industry about Rs. 6 crores in a full year.

(5) The burden of payments of excise duty in advance of the sale of tea grew steadily more onerous especially for those gardens in financial difficulties.

(6) Credit facilities had been controlled in most of the markets of the world, and no one wanted to lock up money in teas the price of which might fall still further.

This curious combination of circumstances overwhelmed the industry. For many to continue in business was impossible ; and at the beginning of 1953, over a hundred gardens had closed and about 50,000 workers had been thrown out of employment.

There were a number of requests for relief but the Principal ones were :—

(a) Reduction or abolition of the excise and export duty. If these duties were not abolished, deferred payment of excise duty. (b) Relaxation of Section 18A of the Indian Income-tax Act i. e., deferred payment of income-tax. (c)

Suspension of the Minimum Wages Act or reduction in the level of minimum wages fixed. (d) Suspension of the implementation of Plantations Labour Act. (e) Conversion of the food stuffs concession into a cash benefit and the State to take over the supply of food grains to labour. (f) Reduction of freight charge on coal and other materials. (g) Provision of finance to tea gardens especially for working capital.

Towards the end of May 1952, the Government of India appointed a Team of officials (Rajaram Rao Committee) to investigate the representations received and advise generally on the relief to be accorded. The immediate effect of the appointment of the Team was a further fall in prices. Buyers either withheld purchases or offered less in the belief that there would soon be, if not abolition, at least reduction in excise and export duties leading to still more favourable price levels.

Reliefs as to deferred payment of excise duty, relaxation of Section 18A of the Income Tax Act, suspension of the implementation of the Labour Act and reduction of freight charges were recommended by the Team. For the reduction in wages, the Team suggested that the industry should make representation to the States concerned for the appointment of Advisory Committees to deal with the matter. As to the provision of finance to tea gardens the Team observed : "Commercial banks cannot be expected to tie up their liquid resources in long term capital projects. These are functions of land mortgage banks and the small Indian tea gardens would benefit by forming a suitable co-operative bank. If the Industrial Finance Corporation is to be of assistance to the tea gardens, some amendment of its Act is essential to enable it to make advances to proprietary tea gardens." The conversion of food stuffs concessions into a cash benefit was accepted by the Team but the legal responsibility for distribution of food stuffs to the workers was to continue to rest on the tea gardens, and not on the Government.

Government Action :—The flat rate of Central excise duty payable on tea manufactured in India at the time of issue from the producing gardens was reduced from 3 as. per lb. to 1 anna and a further excise duty of 3 as. per lb. was levied on package tea from blenders and packers at the time of clearance. The intention was to afford direct relief to the tea gardens and consumers of unpacked tea without affecting significantly yield of revenue. The tea industry's opinion was, however, divided on this measure. One section welcomed it on the ground that it offered growers the very necessary relief of a reduction in initial financial commitments. Another looked upon the levy as highly discriminatory and unwise; unwise because it would have a somewhat repressing effect on internal consumption as the greater part of tea consumed (about 60% of tea consumed in India is sold in packets and the rest in loose form) would be subject to the increased rate of excise duty. According to them it would lead also to a diversion of consumption from packet to loose tea which in turn would cause to close down many of the new firms of this type that had been started in recent years. The Government of India thought that the difference in the rates of duty was much too small to lead to any large scale change in consumption from package tea to loose tea. The industry pointed out that should packers pass the onus backwards to growers in lower auction prices or forward to consumers in enhanced retail prices, the growers for whom the relief was intended might have to accept

lower auction prices and the objective of the Government would not be realised.

In accordance with the advice of the official Team the Government of West Bengal and Assam set up Advisory Committees for cosidering revision of wages and acted on the recommendations of the Committees. A reduction in wages had to be affected. The Government agreed to provide as many wagons as possible for the carriage of coal to tea gardens. The Government further announced a limited guarantee to scheduled banks in respect of their loans to tea estates for 1953 season.

Happily in 1954 the condition improved. Mere declaration by the Northern India Tea Growers to restrict tea production resulted in hectic buying by the U. K. and other consumer countries. The industry made record profits. But the prosperity was short-lived and the trading pattern in tea during 1955 again showed unmistakable signs of the end of a boom of 1954 and the starting of a slow readjustment to a stable price level. The prices of some varieties even went below the cost of production. This was the outcome of the following factors :-

1. Fall in tea purchases by Britain– the biggest buyer of Indian tea. The quantity of Indian tea exported during 1955 amounted to 363.09 million lbs. as against 449.95 million lbs. in 1954 and 500.65 million lbs. in 1953. Although as in previous years, the U. K. was the main customer for Indian tea, having imported 249.27 million lbs. during 1955, yet this represented a substantial decline from that of 326.49 million lbs. imported during 1954 and of 354.92 million lbs. in 1953. This fall in our exports of tea to Britain was brought about by the following factors :—

(a) Unsound economic condition of tea traders in Britain consequent upon the fall in tea prices.

(b) Hard money policy of the British Government which further deteriorated their condition.

(c) Firm belief of British traders to obtain tea supplies as and when necessary from countries of growth especially Africa which auctions its tea produce in London market—a fact preferred by British traders to purchasing tea from abroad.

2. Heavy accumulation of stocks with tea traders in Calcutta. This was the outcome of the Government policy of encouraging auctions in India and restricting the auctions of Indian tea in England.

3. More production of tea in 1955 than in the previous year. The output of tea during 1955 was about 664 million lbs. as compared with 644 million lbs. in the previous year. On the other hand the quantity of tea consumed in India recorded a decline from 182.19 millon lbs. in 1953–54 to about 168.8 million lbs. in 1954–55.

All this demonstrates how sensitive the industry is to the changing climate and psychology. A depression could overtake the industry when supply exceeds the demand by a few million pounds.

Distribution : Coming to the distribution of this important industry in the country, it should be remembered at the outset that tea like sugar manufacture is essentially a "raw material localised" industry. Tea leaves have to be baked within a specified time after they are plucked. It is, therefore, very necessary in order to avoid losses for the industry to be set up in the vicinity of the tea gardens.

Tea industry depends, as it does, upon agriculture for its raw material which in its turn entirely depends on climate and soil. Nature plays a decisive role in

the distribution of this industry. The region of Indian tea cultivation is a wide one. Beginning with the Himalayan plantations in the Punjab near 33^0 N latitude, it extends to the Peninsular India between 10^0 and 13^0 N latitude. The principal belt of tea plantations, however, lies between 23^0 and 32^0 N latitude. The crop is highly concentrated in a few hilly districts of Assam and Bengal. About 74% of the total area under tea plantations lies in the Brahmaputra and the Surma valleys in Assam and in the two adjoining districts (Darjeeling and Jalpaiguri) of Bengal. The elevated region over the Malabar coast in Southern India including the Travancore-Cochin, Nilgiris and Coimbatore) contains 22 % of the total. The Punjab, Uttar Pradesh and Bihar account for the rest. The following table shows the State-wise area and output of tea during the years 1954 and 1955 :—[3]

State	Area (Acres)		Output (Million Lbs.)	
	1954.	1955.	1954.	1955.
Assam.	386,097	385,716	343·7	367·3
W. Bengal	196,037	196,403	162	158
Madras & Coorg.	85,868	86,409	67·8	69·3
Travancore Cochin	83,514	83,821	58·5	57

The excessive concentration of the tea industry in the States of Assam and Bengal can be attributed to the good climate and soil of these regions. There is an intimate connection between the climate and the yield and the quality of tea. Tea grows best in warm and moist climate. The daily variation of temperature should be from 75° to 85° F. If the atmosphere is very moist this variation may be a little greater. A rainfall of about 60 inches annually, if it is well distributed throughout the year is enough. Nothing is more injurious to tea crop than long dry periods. Gently undulating soft country where any excessive moisture is drained away is ideal for tea cultivation. That is why it grows best on hill slopes where rainfall is frequent. In the cooler climate of the hills (i.e., Darjeeling, Kumaon, the Nilgiris and the Kangra Valley) the yield is low but the quality is good. Relatively large quantities of phosphorous and potash in the soil account for the special flavours of the tea produced in Darjeeling. In the warmer climate (i.e., lower Assam) the yield is the heaviest, but the quality is the worst and in Upper Assam which has a climate midway between the above two, the production is also mid-way in both yield and quality.

It will be interesting to note that although Madras and Coorg together occupy the third place among the tea growing States in India in respect of both area under cultivation of tea and quantity of tea produced, it has the largest number of tea estates, with 2,901 gardens, as against 2,872 in the year 1953-54. Travancore-Cochin comes next with 1146 gardens as compared with 1136 in 1953-54. The Punjab which produces just over 2 million lbs. of tea, has 1,125 gardens as against 1,135 in the previous year: these are in Kangra hills. Assam-which accounts for more than 50% of total tea production, has 784 (788) gardens and West Bengal 297 (296).

Present Position

The area under tea cnltivation, at present, is about 789 thousand acres with an output of about 664 million lbs. as compared with 644 million lbs. in 1954. The output per acre has risen from 816 lbs. (in 1954) to 842 lbs. in 1955. The acreage under tea in India is regulated by the International Tea Agreement, which has been in force,

3. Commerce 12th May, 1956.

ever since 1933. This lapsed in March 1950 and it was renewed for another period of 5 years. The permissible acreage for India, according to the Agreement was 806, 728 acres. The restriction imposed by the Agreement does not appear to have hampered normal expansion of the tea industry since even the extension of acreage permitted nnder the Agreement has not been fully utilised.

PROBLEMS OF THE INDUSTRY:

High cost of production :—The plantation Labour Act 1951 covers a wide range of welfare measures, which have no parallel in any industry in the whole of Asia. These statutory welfare works coupled with manifold increase in wages in recent years have resulted in high cost of production of tea in India. Further, the Union Export Duty must be added to the cost. Then come the Assam Carriage Tax of one anna per pound and the West Bengal Entry Tax of one anna per pound. The high cost of railway freight has also contributed to the high price of tea in general. Lastly, the costs of selling and distribution and the administrative overheads have gone upward in the 3 years 1952–54. The remuneration paid to the managing agents is based partly on a percentage of gross sales and partly on a percentage of profits, a fixed minimum in certain cases being prescribed. This results in substantial payments having to be made to the managing agents as their commission, even when profits are low or non-existent as in 1951 and 1952. The Plantation Enquiry Commission estimates that the cost of production of tea is generally higher in sterling and non-Indian rupee estates than in Indian estates. The highest cost was among sterling companies, Rs. 135.66 per hundred pounds in 1953 while the cost of the director-controlled Indian public limited companies was the lowest Rs. 102–11.

2. **Low consumption of tea in the country** :—The quantum of profits per pound of tea packaged and sold by the non-Indian firms has been "quite substantial". This coupled with high cost of production has increased the prices of tea and kept its consumption low. Early in the twentieth century Lord Curzon, the Viceroy remarked that if the average Indian would consume 1 lb. of tea per annum there would be no need of exporting tea abroad. While the production of tea in India has more than doubled since then, this target of consumption still remains a dream. The consumption of tea in India is about 211·5 million pounds* which on the basis of the 1955 population of 371·96 million, works out at about 0.56 lbs. of tea per capita. In U. K., it is 8 lbs. and in Australia 6·5 lbs.

3. **Monopolistic marketing** :—Broadly speaking, there are two markets for Indian tea, one is the U. K., for the sale of better tea and the other—the Indian—for the sale of low-grade tea for export or internal consumption. The Indian market is dominated by 4 non-Indian brokers (there are two more which are Indian) who handled 96.5 % of the total 243 million lbs. auctioned in Calcutta in 1954–55. Since there are no separate brokers for buying and selling, these broker firms are able to control the trade at both ends and their position is further strengthened by the fact that they are associated with the big non-Indian producers as directors of their companies. This concentration of economic power, it is suggested, has been exercised in such a manner that the Indian market has become a profitable dumping ground for appallingly sub-standard teas. *The highest possible prices, in other words, are being exacted from Indian consumers for the remnants of tea available to them after the superior teas*

* Hindustan Times 17th December, 1956.

have been cleard for the London auctions.

Thus at the earliest stage of tea marketing, the Indian consumer, it is said, is made to carry the heavy burden of monopolistic practices in the trade. The subsequent stages are no better. Warehousing is the monopoly of a single non-Indian company, which again has interests both as producers and buyers. Then the retailing is done largely by two non-Indian companies. They sold in 1953 over 96 million lbs. (95%) packed tea. One of them also had their own planted area of 12,000 acres which contributed about 12 million lbs. of made tea.

The toll of monopolistic trade has heavily burdened the consumers in our country.

4. **Financial disabilities :—**The main financial resources of the industry are reserves and advances by the managing agents. The brokers and the commercial banks constitute the external sources of finance. At present roughly Rs. 37 crores are borrowed by the industry from banks annually. The growth in the internal resources of the companies has not been commensurate with the financial needs of the industry. The levy by some of the commercial banks of a charge on gross sale proceeds in addition to interest further aggravates the financial disability of the industry.

5. **Depreciation of tea plants :—**This problem has now to be seriously considered. The economic life of a tea bush, depending upon the soil, climatic conditions and other factors, does not normally exeed 50 to 60 years. In the area covered by the replies received by the Plantation Enquiry Commission, as much as 28.79% of the plants are more than 55 years old. Assuming the economic life of a tea bush to be 60 years, all this will be due for replanting without undue delay. The larger proportion of old plants i.e., those planted before 1900 are under non-Indian ownership. Uprooting and replanting is a costly method requiring huge sums of money.

6. **Fall in exports :—**There has been a progressive fall in tea exports. The quantity of Indian tea exported during 1955-56amounted to 404 million lbs. as against 459 million lbs. in 1954-55, 471 million lbs. in 1953-54 and 427 million lbs. in 1952-53. A sharp fall of nearly 55 million lbs. in exports of Indian tea has resulted in a decline of Rs. 38.60 crores in the tea industry's contribution in foreign exchange during the financial year 1955-56.* This fall in our exports of tea in recent years has been due to the following causes :-

(a) Many large interests stopped entering into forward contracts with merchants in the United States and elsewhere because of the fluctuating market.

(b) The stress on internal sales and the Government's expressed desire to ensure adequate supplies for the internal market have resulted in psychological reluctance to enter into any large-scale commitments for export.

(c) Bad quality of Indian tea exports which apart from inferior packing and deliberate fraud of some of the exporters was mainly the result of war during which, with the cessation of supplies from the Netherlands, East Indies and Chinese gardens, the Indian gardens had to cope with increasing demand and for a time, therefore, quantity and not quality was the prime consideration.

* Index Numbers of Exports (Volume Index).
(Base : 1952-53)

1953-54............110
1954-55............107
1955-56............ 94

(Source : Reserve Bank of India Bulletin July Oct. '56)

Now that the virtual monopolistic position which India had come to enjoy during the II World War has disappeared with Russia, Brazil, Kenya and Turkey seriously engaged in the task of augmenting local production and with the East Indies and Chinese production returning to normal, only timely and effective measures will enable us to maintain the position attained during the war.

Then the fact that the earning capacity of this commodity depends on the taste and demand of consumers in a limited number of countries constitutes a second source of weakness. The long-term prosperity of the Indian tea industry continues to be dependent on the U. K., market to which it owes an overwhelming proportion of the contribution it makes to-day to India's foreign exchange earnings.*

7. **Anomalous export duty** :—By the Finance Act ot 1955, the Government introduced a new scale rate of export duty by which the duty would rise or fall in accordance with the "price of tea" the price being the weighted average price of tea realised in the London auctions during the previous month. But the variations in the prices of North Indian and South Indian tea in London resulted in an anomaly in export duty. Thus, although in the London auctions in a particular month, North Indian tea fetched an average of 6s. 5d. while South Indian tea fetched 3 s. 11 d. only, yet both were subject to the same rate of duty, as the duties are fixed in relation to the average of these two prices.

Remedial Measures

1. To bring down the cost and the retail prices of tea for increasing its internal consumption, the Plantation Enquiry Commission recommends :—

(a) a decrease in the remuneration paid to managing agents and secretaries,

(b) abolition of the commission paid to managers and others and in its place, payment of a consolidated salary,

(c) increased Indianization of managerial personnel and rationalisation of the salary structure of the managerial cadre,

(d) uniformity in the agricultural income-tax on tea plantations in all states. The agricultural income-tax on tea industry may be levied and collected by the Central Government and then distributed to the States on the same principle on which the divisible pool of the income-tax is now distributed.

(e) abolition of the West Bengal Entry Tax and the Assam Carriage Tax.

(f) the preceding six months' weighted average of the prices ruling at the London auctions to be taken into consideration instead of the previous one month's average only for determining the world price of tea for fixation of the slab for export duty,

(g) Abolition of the differential rates of excise duty on packed and loose tea and the restoration of the old uniform rate of duty of 3as. per pound on all tea. However, for producers whose total production does not exceed 5,000 pounds a

* As in previous years, the U. K., was the main customer for Indian tea, having imported 249.27 million lbs. during 1955, although this represented a substantial decline from that of 326.49 million lbs. imported during 1954 and of 354.92 million lbs. in 1953. The United States was the second largest imorter with 24.06 million lbs., as against 32.49 million lbs. in 1954. The Irish Republic imported 17.97 million lbs., as compared with 22.09 million lbs., in the previous year. Among the countries which imported larger quanties of Indian tea during 1955, Egypt is prominent. Exports to this country which had dwindled from 18.14 million lbs. in 1953 to 6.96 million lbs. in 1954, showed a sharp rise to 13.27 million lbs. in 1955. Russia's contribution to India's tea exports was nil. After taking 2.8 million lbs., in 1952, it had not bought a single pound of tea till the close of 1955.

year, the excise duty should continue to be levied at the present rate of one anna per pound only,*

(h) A well-planned and regular study of cost data by the Tea Board for keeping the industry informed about its economic efficiency and competitive position.

2. With a view to breaking up the present concentration of the tea trade in a few hands, the Plantation Enquiry Commission has recommended that :—

(a) The selling and buying brokers should be separated. They should not be connected in any way with the management or be a major shareholder in any tea estate or have any connection with the trade and export of tea.

(b) The output of existing concerns should be limited at the average of the previous three years' production or 6 million lbs. whichever is more. The ceiling may be revised periodically to bring about a situation in which no single unit gets an unduly large share of the market.

(c) The Tea Board should arrange to pack and distribute under its own distinctive labels 50% of the quantity of dust tea, now packaged and sold in this country in small pakages not exceeding one lb. in economy packing.

(d) The Tea Board should give every facility to producers for cooperative marketing of tea.

To meet the financial needs of the industry the Plantation Enquiry Commission recommends as follows :—

(a) In its programme of extension of branches the State Bank should give high priority to opening of braches in tea plantation areas.

(b) The Industrial Finance Corporation and the State Finance Corporations should meet the needs for long-term finance.

(c) Tea companies should float debentures in an increasing measure for future capital.

(d) The Reserve Bank should use its good offices and if necessary use legal powers for the discontinuance of the levy by some of the commercial banks of a charge on gross sales proceeds in addition to interest.

(e) The Tea Board should have a plantation finance Committee to keep a close watch on the financial needs of the industry.

4. To provide for the replantation needs of the industry, the Commission has suggested the following measures :—

(a) A "replanting fund" in every tea estate of 100 acres and more should be set up. An annual contribution of Rs.

* The effect of a higher rate of excise duty on tea sold in packages than on loose tea has been to stimulate the retail distribution of tea in loose from rather than in packages. The Commission considers this to be undesirable since it has the effect of encouraging the distribution of an article of human consumption in a less hygienic form. Such a practice facilitates adulteration with other materials.

1. In October 1954, the Government of India appointed a committee to examine the present system of the auctions and to recommend steps to be taken for the progressive increase in the quantity of tea sold in India. The Committee submitted its report early in 1955. It recommended that there should be a phased reduction in the quantity of tea consigned for London auctions and that this quantity should not exceed 30 per cent of the crop for 1955-56 and 25% of the crop in 1956-57. Thereupon, the Government of India decided that, for the year 1955, the quantity of tea to be consigned from North India to London auctions should be limited to 140 million lbs. as against the actual consignment of 209 million lbs. in 1953 and 167 million lbs. in 1954. In the case of South India, it was not considered necessary to fix a specific ceiling for the current year, because the actual consignments were not expected to exceed the previous level of 23 million lbs. For the 1956-57 season the export quota has been fixed at 160 million lbs. which also seems inadequate.

50 per acre should be made to this fund by each such estate. As a major portion of the acreage and production are accounted for by estates of over 100 acres, the replanting scheme will cover 96·1 % of the total acreage and 99% of the production in the country. The Commission says that the figure of Rs. 50 per acre has been arrived at only as an approximate figure. The Tea Board should make a detailed investigation for arriving at a suitable figure.

(b) The Government should ensure that the tea gardens make necessary financial provision for this programme before they declare dividends or repatriate profits.

(c) The approval of the Tea Board should be obtained for the sale of tea gardens of 100 acres or more. In the case of sales of sterling capital estates, repatriation of sale proceeds should be permitted by the Reserve Bank after it has ascertained from the Tea Board that the necessary contribution to the fund by the estate has been made.

(d) The Tea Board should draw up in consideration with the producers a programme of phased replanting as well as replacement and renewal of machinery and equipment.

5. For improving facilities for the transport of tea from the gardens to the areas of consumption, the Commission has recommended that :—

(a) The Central Water and Power Commission should investigate the existence of shifting sands in the Brahmputra which sometimes cause unexpected and abnormal delays in the navigable channels.

(b) At stations where there are bookings of tea, covered accommodation should be provided for tea awaiting dispatch.

(c) Only leak-proof wagons should be used for the transport of tea.

(d) The road communication in many parts of the tea districts should be improved.

(e) The railway authorities should try to eliminate the shortage of wagons the monsoon months–the main difficulty in south India.

6. To promote exports the export quota system 1 which unnecessarily pegs Indian tea exports should be abolisheded. This will affect to some extent, the income of the small producers. The Plantation Enquiry Commission has made recommendations that these producers should be granted assistance like subsidised issue of manures and supplies of equipment accompanied by technical assistance.

Tea Propaganda : India has withdrawn its membership of the International Tea Market Expansion Board and has along with Ceylon and Indonesia entered into an agreement with the United States Tea Trade for tea propaganda in the U. S. A. The reasons for the action appear to have been : (a) The subscription was a heavy burden on the industry, which was experiencing a slump. (b) Indian representation on the Board's secretariat was very small. (c) Exclusive propaganda for Indian tea could not be organised through the ITMEB.

As in 1954, a Tea Delegation visited the U. S. A. and Canada in September and Oct͏ober 1955. The Delegation toured the U. S. A. and Canada extensively and studid the pattern of tea trade, consumers' preference and marketing prospects of Indian tea in those countries. The Delegation also visited Australia and New Zealand.

The Chairman of the Tea Board visited Amsterdam, Hamburg and Dublin in order to aquaint himself with the working of Tea Councils at those places.

In collaboration with tea trade interests, Tea Councils have been set up in the U. S., Canada, West Germany, Eire and Holland. These Councils carry on propaganda for increased consumption of tea generally.

The Tea Board participated in various foreign exhibitions held in Italy, Canada, Sweden, Ethiopia, Austria, Indonesia, Pakistan and Cambodia.

A target of 700 million lbs. has been fixed under the second Plan. This figure is not very much higher than the existing production, but it cannot be achieved from the existing acreage if a high standard of plucking is to be maintained. Addressing the general meeting of the Association of Planters of Madras State in August 1956, its chairman Mr. H. C. Kothari suggested that the obvious way of increasing production was by planting in new areas. "But this is a slow process and its cost is prohibitive unless the Government gives some tax relief on this item of capital expenditure. This would also make it possilbe to find employment for the ever-increasing labour forces on estates," he said.

PROSPECTS OF ECONOMIC IMPORTANCE OF MANGO

By: **Shri V. S. HABBU**

Habitat

MANGO tree is a native of India as the scientific term "Mangi Ferra Indica" denotes. It is a fruit plant which is found to grow throughout the length and breadth of India. India may perhaps be the only country in the east where this abounds, since it is not much heard of in the neighbouring countries. It flourishes under different conditions of climate and soil. It is not fastidious with regard to soil conditions and care as other fruit plants. The sturdy tap roots find their way through hard layers of sub-soil and even through rocky state provided these roots find some crevices to penetrate. It grows even in scanty rainfall areas. This is demonstrated by the presence of large sized mango trees in the tree-less tracts. They are like oasises in the deserts. This is indicative of its hardihood. It is found to grow in the forests with other wild species and attain huge size. Water-logging is the only condition which it cannot bear.

Utility

Coconut is known as 'Kalpa-Vraksha' since every part serves various purposes. So also does mango. The trunk serves as timber for poor man's cottages, canoes or small boats are scooped out from larger ones. Mango wood is much valued in match industry. The entire woody portion serves as fuel. Its leaves serve as litter in compost making. The small twigs with leaves have their place in all auspicious and religious ceremonies. Its twigs are the chief material in decorating arches on special occasions.

Mango is an ever-green species and may be serving to keep up even sub-temperature. It also serves best as a shade tree. It appears to be of special importance to treeless tracts with scanty rainfall in creating favourable conditions to attract clouds and bring about rain.

Its fruits in various stages of development are used for edible purposes in various preparations. Tender unripe fruits are used for pickles, chutneys and condiments etc. Ripe fruits especially sweet ones serve as desert fruit. Mango fruits are looked upon as a fruit of delicacy having high nutritive value. There is no Indian who does not appre-

ciate mangoes. Ripe fruits are eaten as such and also used in preparing various kinds of sweets. Mango pulps of special varieties are canned for export and for use during off season. Mango is of economic importance to growers as it brings in cash. A heavy bearing tree of good variety brings the grower 100/- and even more. An average tree gives from 25/- to 50/-. About 25 to 30 trees can be accommodated in an acre. The trees come into bearing about 7 to 10 years after planting. The bearing capacity increases with the age of the plant and continues to yield fruits upto 30-40 years and even more. Mangoes bear fruits, usually in alternative years any minimum income of Rs. 200/- each year on an average may be expected. No other crop or tree will give this much income, on the types of lands which are recommended for planting and the little after care they require.

Since mangoes are liable to perish quickly they are usually marketed in nearby urban areas. Where transport facilities such as, good road, railways, or steamers etc. exist, they are transported to pretty long distances. Though mango is restricted to India and it is not found to flourish especially in the countries in the west it has not made its way into markets outside India. Fruits of good variety appear to have good prospects in the European countries where it is not much known. When our Prime Minister took a consignment of mangoes to Russia during his tour there, the Russians showed complete ignorance of it. But they very much appreciated the fruit. So far the fruits did not reach the foreign countries on account of its perishable nature and want of speedier means of transport. Now the conditions have changed. There are air services to various countries and cold storage facilities which enable quick movement and preservation to any length of time without deterioration.

Varieties of Mangoes

Mangoes can be split up into two major groups viz sour and sweet varieties. Sweet ones may further be grouped into grafted and non-grafted. The sour groups and the non-grafted sweeter ones are the products of the natural spread form droppings of seeds and from the seeds thrown away by people after eating the fruits. This group claims the largest area. The sour ones are used for pickles, chutneys etc. In the group of sweet ones mainly used when ripe there are many grades depending upon consistency of the pulp and the presence of fibres. Amongst the grafted, those having harder pulp, absence of fibres, having good keeping qualities and sweet flavour are considered to be the best. This of course depends upon the individual taste. "Alfanso" of Ratnagiri district and "Langra" of Northern India are wel-known as the best varieties, though there are many other equally good varieties. Amongst the fruit plants mango has got the largest number of varieties going under different names in different parts. This is due to the fact that large number of them are the products of seeds which do not come true to their original as the mango blossoms are usually cross-fertilised.

Propagation

Mango plants can easily be raised by planting seeds. Since the resulting plants do not come up true to their original type as aforesaid, grafting is taken recourse to. Grafting is commonly done by what is known as "Khuti" method. This is done by inserting scion of a desired quality on unspecified stock plants. This method is followed for grafting seedling in " Situ ".

"Grafting by approach" is an improvement over the "Khuti System". This

method is largely availed of for preparing mango grafts for marketing. One draw-back in this is that since the stock plants for preparing grafts are raised in pots, the tap roots get coiled and when these plants are planted in the ground the roots cannot readily avail of the moisture and nutrition from the deeper layers of sub-soil as the plants in "Situ" do. Hence the grafts raised by approach method require to be watered until they establish themselves.

"Budding" is a new technique that is being tried; but it has not been universally adopted as the percentage of success is very low. However this method appears to be of special importance as it shall effect the saving of scion branches in large numbers which are used for grafting by approach and khuti methods.

Present Position

Inspite of the fact that mangoes grow and flourish under trying conditions with less care and serve the industry and man has got extensive areas suitable for cultivation and good prospects for export, it has not received due attention from the public and the Government too so far. The scope for extension lies in high lying marginal areas uplands having no irrigational facilities for growing any other crop, hill slopes bare of any vegetation, sandy battas and the like. When planted wide apart, on uplands where dry crops are grown they do not come in the way of cultivation until they cover up their inter-spaces. Extensive areas are lying fallow and they can be profitably planted with mangoes. Thus the scope for the extension of mangoes is enormous.

However the Planning Commission has fixed upon a target of increase of area under fruits by 50% during the second five-year plan. It may be said that a bright future is drawing upon mango of all India importance.

The following programme is suggested for the future development.

1. Since extension of area will bring about larger production which may have to find suitable markets it is necessary to select such varieties as have got the best qualities. To find out the suitable varities a detailed study and survey of well reputed varieties in different parts of the country should be taken up by the Department of Agriculture in all the States.

2. An All India Mango Show should be organised to give an impetus towards extension and for selecting ideally suited varieties.

3. "Vanamahotsava" has now become an annual feature. On this occasion planting of mango seeds and grafts should be given the highest priority on all lands where it can be grown. Bare hills in charge of the Forest Department may be covered by planting seeds since Government is anxious to cover such areas with trees to prevent erosion of soil and increase the areas under trees. In the areas which receive scanty rainfall and are subject to periodical failures of rain followed by famines, planting of mango seeds on extensive scale should be resorted to. Seedlings from seeds send down their tap roots into deeper layers of soil and feed upon the natural moisture. They shall grow with least care. In protected private areas the seedlings can be got grafted in due course of time. In a tract where water supply is limited raising seedlings in situ and then grafting is preferable to planting ready made grafts raised in pots as the latter require watering until the plants are well established.

4. Special prizes should be awarded for raising largest number of seedlings in situ in famine stricken tracts.

Agricultural Department should establish nurseries supplying genuine grafts to the public at reasonable cost. Further the services of malis should be made available for grafting plants in situ. It is also necessary that the horticultural section should perfect the budding method.

6. Training classes should be arranged in different localities to give practical instructions in different methods of grafting. Prospective large scale planters should be assisted with adequate long term finance as the mango trees do not come to full bearing until they are about 10 years old.

7. Preservation of fruits and pulp will be necessitated in due course of time. Canning of pulp has to be encouraged to enable to export to outside markets.

8. Now there are regular air services from India to various outside countries where mango is not known. Government should encourage export of mangoes by air by offering concession in transport charges.

9. Our Union Government has got Embassies in almost all the countries. These Embassies have got trade attaches. This section can very well undertake measures to popularise the use of mangoes.

Attempts may be in progress to grow mangoes in other countries as well and may establish their produce in suitable markets. India should therefore be in advance.

WHETHER CO-OPERATIVE FARMING ?

By : **R. D. PRASAD.**

INDIA is a land of small peasants. It is said "they are born in debt, they live in debt and they die in debt." Their holdings are small and uneconomic. They are engaged in Agriculture only for 8 months and for the rest of the period they are idle. Land is managed mostly by individual peasants. Their resources are limited and they are handicapped for want of technical knowledge. They believe in superstitions and they are resistant to progressive ideas.

With this background, let us think if Co-operative farming or peasant proprietor-ship will succeed in India.

In neither case the right of the peasant over the land is jeoperdised. In the past the peasants proprietorship in India failed to maintain the basic fertility of the soil with the result that the yield per acre went on decreasing.

Now the conditions are different. With the opening of N. E. S. and Community Projects the results of research are not only confined within the four walls of the laboratories but they reach the doors of the average cultivators who are now giving whole hearted support to the extension workers in killing the demons of poverty, ignorance and superstitions by maintaining the fertility of soil through green manures, addition of Farm Yard Manures and fertilizers etc. and welcoming progressive ideas.

In co-operative farming the fertility of the soil which is a national asset can be maintained nay can be increased by application of improved methods of agriculture such as rotation of crops, green manuring and control of erosion of soil. The fertility of the soil being maintained, the yield per acre is bound to go up. The

right of the farmers over land is not being touched directly or indirectly and this satisfies the hunger for land which creates interest in their profession.

Production per acre is highest in case of peasant proprietorship in other countries of the world as efficiency in farming is increased by personal care of the individual but in our country yield has gone down as the individual is handicapped in so many ways mentioned above.

It is said that peasant proprietorship will decentralise the agricultural economy of the country which aims at establishing "Socialistic pattern of Society' in future and thereby the gulf between the rich and the poor will be bridged to a greater extent. Besides this employment will be maximum in this farming.

Co-operative farming is based on voluntary participation of the members and democratic principles and as such the danger of centralisation is obviously obliterated. Employment will be lesser no doubt but it will be gainful. The members who are not required to be engaged in this farming will be absorbed in industries subsidiary to agriculture.

Peasant proprietorship is susceptible to litigation but it is considerably reduced in Co-operative Farming.

Jealousy and laxity may corrode the co-operative endevour and inefficiency may creep in but the morale of the members of the co-operative farming is expected to rise above petty squabbles as they cannot remain unaffected with the wave of nationalism which is rising day by day.

It is expected to create a new society where co-operation and not "competition' will reign supreme and thereby the weaker section of the society will cooperate for their existence and the rich cannot be allowed to grow richer at the cost of the poor.

Co-operative farming will usher in an era of peace, plenty and prosperity and millions of the starving peasants who, at present are night mare to themselves and to the society will be converted into precious assets of the nation provided proper and human direction is given to them and they march unitedly.

CHANNEL V/S OVER-HEAD IRRIGATION

By : **KR. NARAIN SINGH**

RECENTLY when I was walking in the Public Park Jodhpur I was surprised to see rainfall in a distant plot of flowar beds. The sky was clear, sun was bright and rains were not expected but my eyes did not deceive me and when I reached the spot I found that the big trees, flower beds and lawns were completely drenched under heavy showers which were falling overhead like rain. On enquiry I was informed that it was a demonstration of over-head irrigation. An ordinary pumping machine was working on a tank in which its suction pipe was dipped to lift the water for irrigation purposes and it had a delivery pipe to which were attached many pipe lines which were spread in the area to be irrigated. Nozzles of various designs and sizes were fitted in the pipe line to regulate the quantity of water required for different plants at their different stages of growth. Some nozzles threw water high like showers above the big trees with such a force that every leaf was completely washed. The nozzles are so beautifully designed that

they sprinkle water all round uniformly like rain.

It was not only a pleasing sight, but from the agricultural point of view it appeared to me to be very useful and profitable. I do not know the cost of the pump and its equipment. It may be beyond the means of an average farmer but so far as the efficiency of this method of irrigation is concerned I think it has many advantages over the prevailing channel-system of irrigation in which there is more wastage of water through leakage, seepage and evaporation. More water is applied to the crop than what is actually needed. There is over flooding in the low—lying areas where the plants suffer by water logging. There is also loss of manure through leaching. The channel irrigation packs up the soil and thus retards the beneficial soil aeration processes and the physical, chemical and biological properties of the soil are also damaged.

Making of water channels is also a costly operation. This over-head-system of irrigation is likely to minimise the above defects and has certain definite advantages like economy of water, controlled supply of water, washing of leaves and thereby accelerating the carbon assimilation process which is very necessary for the healthy and rapid development of plants. It also increases the humidity in the air just above the plants and thereby minimises loss of water through transporation and evaporation.

Many plant diseases can also be controlled and even cured by spraying the medicated water over plants and trees. This system should prove more useful for sloppy lands where channel irrigation is difficult. It will be worth while trying this system with channel irrigation to see its effeciency in a measured area to collect the data regarding time, quantity of water supplied and the depth of moisture produced in the soil and its effect on the atmospheric temperature. It will be in the interest of the petty farmers if somebody will throw some light on its financial aspect also.

A ZONAL SURVEY OF BREEDS OF INDIAN CATTLE

(Part two – Central zone)

By : **DAYAL DASS SHRIVASTAVA**

THE central zone comprises of the States of Madya Pradesh and Uttar Pradesh. With regard to food supply the central zone is a surplus area and grows a wide variety of staple crops in its different geographical divisions. Some of the major crops grown are; wheat, gram, barley, linseed, jawar paddy, pulses, oilseeds, millets, cotton and sugarcane.

There run across the length of the two States six of the most important rivers of India. They are Ganges, Jamuna, Chambal, Narmada, and Betwa. These rivers are responsible for lakhs of acres of irrigated land in the zone. Uttar Pradesh has the richest soils and Madhya Pradesh has ample grazing areas in its vast ranges of Satpura and Vindhyachal and thus have a direct bearing on the quality of cattle. The different breeds of cattle of the central zone resemble in many points to each other and are mostly white or grey white in colour. They are also similar in many ways to cattle in nothern zone because of a common

historical background. Still, however, there are many breeds of marked qualities and out-standing characters peculiar to each of them. The popular breeds of cow and buffalo in the two States are as below.

Breeds of Madhya pradesh.

(1) Malvi, (2) Nimari (3) Gaolao, (4) Kenwariya or Kenkatha, and, (5) Nagpuri buffalo

Breeds of Uttar Pradesh.

(1) Kherigarh (2) Ponwar (3) Mewati or Kosi (4) Murrah buffalo.

The Characteristics and other-outstanding points of each breed are discussed below.

1. **Malvi :-**

The Malvi cattle are found in the plateau of Malva and the adjoining hilly tract of Vidhya hills. The plateau has an average altitude of 1600 feet above the sea level, but the higher plateau land consists of vast rolling plains with flat topped hills scattered over their surface. Some of the hills rise to about 3000 feet above sea level. The area has a number of rivers such as Betwa, Chambal, Kali-Sind, Mahi, Sipra, Tons and Ken. The major portion of area is covered with fertile black cotton soil of the heavy loam type. The plateau has a dry moderate climate. Summers are sufficiently hot, winters moderately cold with chilling temperatures at many places. The tract is highly cultivated; where no grain has been planted the land is covered with heavy fields of grass affording excellent grazing to cattle in most parts of the year. By products from linseed, cotton, niger, mustard, ground-nut, wheat, jowar and millets are used as cattle feeds.

Physical and functional characteristics of the breed :—

Malvi cattle resemble to a certain extent to Kankrej or Gujerat in Western zone. They are short deep and compact animals ideally suited for draft purposes in their tract. The back is straight but the hind quarters are drooping. The legs are powerful but short with black hooves. The dewlap is well developed and sheath is pendulous. The head is short and broad with dished forehead. The hair around the eye sockets and eye membranes are black in colour. The tail is of medium length with black switch reaching upto fetlock. The colours grey, greywhite, or pure white deepening in the mature male to a dark iron-grey almost black on the neck, shoulders, hump and quarters. The females become white on maturity. The breed is popular for its draft qualities both in fields and on roads. The cows are poor milkers, but selected cows have been found to yield as much as 2000, to 2700 pounds of milk per lactation.

From its native home of Malva, the breed has been exported to other areas such as northern most parts of south zone, Sagar district in M. P. extending upto borders of U. P. and Bundelkhand,

2. **Nimari.**

The Nimari cattle are natives of Nimar area. The area comprises of the whole Narmada valley from the Gunjal river on the east to the Haranpal on the west, in both of which places the Vindhya and Satpara ranges of hills run down to the river. The soil of the area is formed from disintegrated trap rock and is partly alluvial. The climate is dry and healthy. Light rainfall and cool winds from the west make the monsoon season pleasant. The winter is mild.

Physieal and functional characteristics:—

Nimari cattle are suppposed to have an admixture of Khillari and Gir breed with established characters. They have moderately long head with a somewhat bulging forehead and the horns usually emerge and a backward direction, from

the outer angles of the poll and turn upward and outwards and finally backward at the points. In general they are red in colour with large splashes of white on various parts of the body.

The breed is popular on account of its working capacity in rough areas. The average working life of bullocks is estimated to be 6 to 8 years. Heifers calve at the age of 4 to 4½ years. The cows are poor milkers and very few cows are milked in villages. The breed has spread to parts of Berar in Bombay State and in nearing areas in its nativity.

3. **Gaolao.**

Although best specimens of Gaolao breed are found in Arvi Tahsil of Wardha district, the breed has established itself in south-western areas of Madhya Pradesh and a sufficient number of cattle of this breed are found in Balaghat and Chhindwara districts. Gaolao cattle are bred in hilly areas by the side of Wardha river. An outlying spur of the Satpura range runs down through the area, the average altitude of which is about 2000 feet above sea level. The soil is black in thin covering over a sheet of trap rock. The summers in the area are oppressive and the winters are mild. Grazing is usually available from the middle of July to the end of October. Grasses mature quickly and become coarse and woody. The soil is suitable for growing crops such as Jawar, paddy, cotton, linseed, ground-nut and safflowers and the by products from these crops are utilised as cattle feeds.

Physical and functional characteristics:—

The Gaolao cattle are of medium height, but are generally light of build, tending to be narrow in frame and leggy, probably because of inadequate feeding when young. The ears are medium sized and carried high, giving on alert appearance to the head. The dewlap is voluminous in the male and the sheath is slightly pendulous. The females are usually pure white and the males grey over the head, neck, hump and quarters. It is reported that animals get shaded on the neck and hump during certain parts of the year but this character has not been confirmed as yet. The head is markedly long and narrow with a straight profile usuallv tapering towards the muzzle and somewhat broader at the base of the horns. The forehead is usually flat. The horns are short and stumpy, blunt at the points and commonly slope slightly backwards. The skin is thin and loose.

The Gaolao breed has been developed for fast transportation purposes in hilly country and within the last 20 years some attention has been paid to develop its milk quality. The animals have been found to yield 2660 pounds of milk in 381 days in special cases with a calving interval of about 15 months and an average percentage of fat of 5.5. Bullocks are active and willing workers.

It is only recently that this breed has been utilised for grading up local scrub cattle in Madhya Pradesh and also in parts of Bombay State.

4. **Kenwariya or Kenkatha.**

They take their name from the River Ken which flows through the tract of the breed. The river originates in Vidhya hills and runs through parts of Madhya Pradesh near Damoh, then enters Banda district of Uttar Pradesh and joins the River Yamuna. Kenwariya cattle are also found in Panna, Charkhari, Bijawar and Ajaigarh areas in Madhya Pradesh. As the Malvi cattle are found extensively in Sagar and Damoh areas which are so near to Kenwariya tract, it seems reasonable to assume that Kenwariya cattle are related to Malvi cattle in this area.

The area of the Kenwariya cattle is a rugged area traversed by the ranges of Vindhya hills which never rise more than 2000 feet above sea level. The soils in the area are of three types, that is, (a) reddish brown and very coarse grained, (b) brown, with greater depth and suitable for cultivation. and, (c) dark brown to black in colour and very fertile. Winters are comparatively mild in this area whereas, the summers are sufficiently hot. Rainfall is abundant in July and August and hence the growth of grasses in hills for grazing. Much of the area grows millets and oil seeds. Barley and wheat are grown on more fertile areas. Straws and husks from the crops are utilised as cattle feeds.

Physical and functional characteristics:—

They are small, sturdy and fairly powerful cattle. The head is short and broad and the forehead is dished and resembles that of Malvis. Horns are different than Malvi's as they emerge from the outer angles of the poll in a markedly forward direction and terminate in sharp ends. The sheath is somewhat pendulous and the dewlap is moderately heavy. They are grey and dark in colour.

Kenwariya cattle are popular for light draft on the road and cultivaticn. They thrive on poor feed. The females are poor milkers.

5. Kherigarh.

The Kherigarh cattle are closly related to Malvi breed and found in the district of the same name in Uttar Pradesh. The district ls bounded by River Mohan in north, by Bahraich district on the east and by district of Pilibhit on west. The whole of the area is studded with many lakes and in south-west are large shallow Swamps. The predominant soil consists of deep alluvium with occasional nodular lime stone. The area has a high humidity. Summers are hot and winters sufficiently cold, the temperature falling down to almost Zero degree. The area receives heavy rainfall and grows coarse grasses in abundance. The crops grown are paddy, maize, sugarcane, wheat, barley and oilseeds such as rape and mustard.

Physical and functlonal characteristics:—

Kherigarh cattle are generally white or grey in colour. The face is small narrow. Horns are thin and upstanding and measure 12 to 18 inches in length in bulls, the cows have usually smaller ones. The neck is short and looks powerful. The sheath is short and moderately tight. The hump is well developed in bulls. These animals are very active and thrive on grazing only. The bullocks are good for light and quick draft. The cows are poor milkers. The animals mature late and heifers deliver at the age of 5 years.

Bullocks of this breed are used in some of the eastern districts of Uttar Pradesh.

6. Ponwar.

Ponwar cattle are found in the Puranpur Sub-division of Pilibhit district of Uttar Pradesh. The area is only a short distance from the out ranges of Himalayas. The river Gomati rises from the swamps of this area which is mainly under forests. The district consists almost entirely of alluvial soil. This area also has humidity. The rainfall is heavy and winter rains are specially heavy. The grasses which are common in this area show remarkably rich vegetative growth but they are observed to be coarse and not so nutritious. Paddy is the staple crop.

Physical and functional characteristics:—

These cattle are long horned and narrow faced animals. The ears are small and

the eyes bright. The neck is short and powerful. The hump is well developed in bulls but it is small in cows. The forehead is slightly concave and often has white markings. The sheath is short and tight. The tail is long and tapering with a white switch. Ponwar cattle are usually white and black, the colour markings do not have any particular pattern, but large patches of both shades are intermixed. The average height of a bull is 50 inches. Bulls weigh around 700 to 800 pounds.

The ponwar cattle are active and often fiery tempered. They are observed to thrive well under free grazing conditions. The bullocks are good for draft purposes. They are quick movers. The cows are poor milkers and rarely milked.

7. Mewati or Kosi.

The tract known as Mewat is the home of Mewati cattle near Mathura district of U. P. and because they are marketed mainly at Kosi, they are referred to by the name. Mewat is an ill-defined tract lying south of Delhi, the whole of Alwar, a part of Bharatpur and some parts of Mathura district. Also it includes a part of Gurgaon district of the Punjab. Most of the area is flat rocky and sandy and is intersected by the lower ranges of Aravalli hills. The soil is loamy. The water supply is mostly from ponds. The climate is dry. Summers are hot and become unpleasant with sand-storms. The crops grown are sorghum, millets, pulses, wheat and barley. Of the grasses Dub is more commonly found.

Physical and functional characteristics:—

Mewati cattle are similar in type to Hariana (Phillips-1944). They are usually white in colour with neck shoulders and quarters of a darker shade. The face is long and narrow with the forehead slightly bulging. Horns emerge from the outer angles of the poll and are inclined to turn backwards at the points. The muzzle is pitch black in colour. The ears are pendulous but not so long. The dewlap though hanging is not very loose. The sheath also is loose but not pendulous. Cows usually have well defined udders.

The Mewatis generally are sturdy, powerful and docile and useful for ploughing, carting and drawing water from deep wells. The cows are supposed to be good milkers. According to an estimate their yield was found to be averaging round 10 pounds per animal per day.

Only the bullocks of their breed are exported, largely to the parts of Uttar Pradesh. It is estimated that there are approximately 4,00,000 (four lakhs). Mewati cattle in the area.

Breeds of Buffalo

Buffaloes in M. P. and U. P. are chiefly kept for milk production because of their higher milk yields of richer fat contents. Buffalo-males are in many parts kept for draft purposes specially for work in paddy fields and for drawing water from wells for irrigation purposes. The he-buffaloes are carried long distances and marketed in the places where they are required. Chhatisgarh area of Madhya Pradesh imports and maintains quite a large number of buffalo bullocks from the districts of Hoshangabad, Sagar, Damoh and Jabalpur.

In Madhya Pradesh, buffaloes of local types in many areas are kept for draft as wells as milk purposes and most of the animals kept in urban areas have been cross-bred and graded to types from northern India mainly Murrah or Delhi type buffaloes. Of the local type Nagpuri buffaloes concentrated in the districts of Nagpur (Bombay State), Chhindwara, Seoni and Jabalpur in M. P. have been

observed for fair milk yields. They are largely used for draft purposes but are slow movers as compared with good bullocks and like all buffaloes cannot tolerate bright sun light of the day. This is a hardy breed of buffaloes capable of ranging over long distances for their food.

In colour, they are usually black but white patches on the face, legs and tip of the tail are not uncommon. The horns are long, flat, curved and carried back on each side of the neck often behind the shoulder.

Uttar Pradesh has a large number of buffaloes in its large number of cities and villages. They differ in their characteristics according to local conditions of soil, climate and systems of breedings. Most of the buffaloes are non-descript type, for the individuals from the same area do not confirm to certain common points, how-so-ever marked they may be known in their individual performances.

In the north-western part of Uttar Pradesh continuous import of large number of Murrah buffaloes for milk production has been reported for the last many decades. So much so has been the concentration of imported animals that it has now formed almost a breeding place of these buffaloes which previously belonged to Delhi and Punjab provinces.

The home of Murrah breed of buffaloes is the northern Punjab and Delhi State, but is also extensively bred in northern districts of Uttar Pradesh i. e. in the districts of Meerut, Aligarh and parts of Mathura. The buffalo-cows of Murrah breed are amongst the most efficient milk and butterfat producers in India. They are the chief source for production of milk and Ghee in almost all the big cities and towns throughout the country and more especially in the northern parts. Average lactation yields of milk in these herds vary from 3000 to 4500 pounds and several individuals have yielded over 7000 pounds in a single lactation. The average butter-fat content is approximately 7 percent.

Murrah buffaloes are usually black in colour though a brown grey colouring of the hair is not uncommon and white markings are frequently seen on the face, legs or tail. The animals are very massive, stockily built, with deep wide frame, short massive limbs, well developed Udder and short tightly curved horns. It is a breed of all India importance and many herds are being maintaind at the Agricultural and other institutions throughout the country.

IMPORTANT NOTICE

The August issue of 'Rural India' will be reaching the readers by the end of the 3rd week of August 1957.

Manager

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